AMERICAN BEE JOURNAL

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AUG 4 1945
DETROIT

August, 1945

CONTAINERS

A Complete Line—
Priced Right

Tin

5 and 10 lb. Friction Top.
5 gal. Square, bulk or cased.

Glass

16 oz., 20 oz., 32 oz., 44 oz. and 5 lb.

Comb Honey

Cartons.
Cellophane Wrappers.
Shipping Cases.

Carloads in stock.
Write for complete price list.
For the best service order from

•

THE A. I. ROOT CO. OF IOWA
COUNCIL BLUFFS, IOWA

HONEY CONTAINERS

We have a complete line of "Utility" style jars with white coated covers, lacquered, and wax-paper lined.

10-lb. jars per case 4	$ .45
5-lb. jars per case 6	.42
2-lb. jars per case 12	.42
1-lb. jars per case 24	.73
½-lb. jars per case 24	.67
½-lb. jars per case 48	1.28
5-lb. tin pails per carton 50	3.35
10-lb. tin pails per carton 50	4.95

Standard square American cans, well seamed and soldered with 2½ inch screw cap wax-board lined.

Box of 2, 60-lb. cans	$1.00
Carton of 24, 60-lb. cans	7.44
60-lb. cans in bulk, each	.32

We also carry a full stock of other honey packages, comb honey cartons and wrappers.

5% discount on tin and glass orders of $50.00.
10% discount on tin and glass orders of $100.00.

August Lotz Company

Manufacturers and Jobbers
of Bee Supplies
BOYD, WISCONSIN

YORK'S

Package Bees and Queens

•

Quality Bred Italians

•

2-LB. PACKAGES OF BEES WITH QUEENS, $4.25 EACH, ANY NUMBER

3-LB. PACKAGES OF BEES WITH QUEENS, $5.25 EACH, ANY NUMBER

YOUNG LAYING QUEENS, $1.25 EACH, ANY NUMBER

TESTED QUEENS $2.50 EACH, ANY NUMBER

QUEENLESS PACKAGES, deduct $1.10 per pkg.

Quality and Service on any size order. No cheap bees or queens, only the best is our motto. Booking orders for 1946, same terms, subject to later revised prices.

•

YORK BEE COMPANY

Jesup, Ga., U. S. A.

(The Universal Apiaries)

ITALIAN

Queens Queens Queens Queens

•

Daughters from Queens

That have stood the test in our Northern units. August and September is the time to requeen all your colonies.

GOOD QUEENS OUR SPECIALTY

Try our queens, try our service. All queens mailed within 24 hours after order is received.

SAFE ARRIVAL GUARANTEED

Queens	1 to 24	25 to 49	50 to 100
	$1.25	$1.20	$1.15

15% from the above prices balance of season

•

Tanquary Honey Farms

(Inc.)

Lena, South Carolina

EXTRA PROFITS For You When You Sell Your Honey to BRADSHAW--

WHY?

BECAUSE—

1. We want you to help us serve the 22,336,000 consumers living in the areas in which we have distribution on Bradshaw Label.
2. Our live wire aggressive sales organization is on the job with up to the minute merchandizing programs for retailers and consumers from coast to coast.
3. Our two packing plants (at Mapleton, Iowa and Wendell, Idaho) are strategically located. They are streamlined for volume production at lowest possible cost enabling us to pass savings on to you, in the post war.
4. FORTY years' experience in the honey business is evidence of our reliability.

We need your honey today and we will need your honey tomorrow, next year and the years thereafter to support our all out victory for increased consumption of honey. We will pay you ceiling prices.

Phone, Write or Wire

R. D. Bradshaw & Sons, Wendell, Idaho

or

O. E. Babb, Mapleton, Iowa

Better Bred Queens 3-Banded Italians

We are breeding from some record breaking queens, "better than ever." Rush orders filled promptly. Remainder of season, 75c each, any quantity.

CALVERT APIARIES Calvert, Alabama

FOR SALE

1,000 colonies bees with location, $12.00 each.

ELMER HASTINGS

150 S. Morris St. Mesa, Arizona

KELLEY—"THE BEE MAN"

QUEENS 75c Each ANY NUMBER

Young 3-banded laying queens, fresh from our yards; health certificate with each shipment. Shipped daily from Paducah.

THE WALTER T. KELLEY CO., Paducah, Ky.

H-A Honey Jars move your product from shelf to home.

HAZEL-ATLAS GLASS COMPANY

WHEELING, W. VA.

QUEENS, Gentle Leather Italians

FROM NORTHERN RECORD PRODUCERS

The same bees we use in our own yards.

BY AIR MAIL.

1 to 50, $1.25 51 to 100, $1.20 101 up $1.05

We can book your order for 1946 bees and queens at no cost to you until November when we will require 10% deposit.

TELEPHONE OR WIRE

The Rich Honey Farms

New Iberia, Louisiana

POST OFFICE, JEANERETTE, LOUISIANA

The American Bee Journal Classified Ads Bring Results

VIGOROUS, PRODUCTIVE QUEENS

THREE-BANDED ITALIANS

Any Number $1.00 each

W. E. PLANT Hattiesburg, Rt. 2, Mississippi

NORTHERN BRED LEATHER COLORED

ITALIAN QUEENS

Daughters of stock bred for resistance (our own strain) $1.00 each—25 or more 90 cents each.

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Do you know about the

LORD'S ACRE PLAN

for support of the rural church? Get monthly reports of it in the

Farmers Federation News

3 years $1 or send 2 cents stamp for sample copy. Address ASHEVILLE, N. C.

FOR SALE

BRIGHT YELLOW AND THREE BAND QUEENS

GRAYDON BROS.

RT. 2 GREENVILLE, ALA.

Beekeepers Magazine

Serving the Honey Producers of America

Subscribe now at $1.00 per year. Subscription rate advances to $1.50 January 1, 1946. Copy current issue 10c.

RT. 5, BOX 181 LANSING, MICHIGAN

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Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view.

By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as MOORE'S STRAIN OF ITALIANS, which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Send for descriptive circular and read reports from those who have tried them.

Untested Queens, $1.25 each; 6 for $7.00; 12 or more, 1.00 each.

J. P. MOORE, R. 3, Falmouth, Ky

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Safe arrival and satisfaction guaranteed

GLEANINGS IN BEE CULTURE

FEATURE ARTICLES—NEWS ITEMS
MONTHLY TALKS TO BEEKEEPERS

Subscription Rate

1 year, $1.00; 2 years, $1.50; 3 years $2.00
In United States and Canada

THE A. I. ROOT CO.

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WE have high producing stock, prolific and gentle. They are given extra care and go out by fast express or mail service. Requeen all your yards this year and get ready for another good season.

THE DANIELS APIARIES
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If you are interested in Pigeons, you need the AMERICAN PIGEON JOURNAL, an informational instructive 52 page monthly magazine, sample 15c; 12 months, $1.50.
AMERICAN PIGEON JOURNAL
Dept. B Warrenton, Mo.

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Your colonies now with our queens bred from 3-Banded Italians. Northern stock of proven quality.

$1.10

Accepting orders of 1946 packages that will be shipped on time

WICHT APIARIES
406 Miller Street : Hattiesburg, Miss.

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The Leading Bee Journal of the Southern Hemisphere is the
AUSTRALASIAN BEEKEEPER
Subscription 5 shillings per year, start any time. Enquire for International money order for 5 shillings (Australian) at your Post Office, Write now to The Editor, P. O. Box 20, West Maitland, New South Wales, Australia.

QUEENS, Selected Italian Stock

I have been selling queens since World War I and I have hundreds of satisfied customers who have bought my queens each year for as many as 15 years. Satisfaction guaranteed. Price $1.10 each, postpaid.
West Branch Apiaries, Grover Hill 2, Ohio

BLUE RIBBON
Package Bees
"BEST IN THE WEST"
THOS. C. BURLESON, COLUSA, CALIF.

PRE-WAR SERVICE & QUALITY

Package bees headed by our famous queens. May we have the privilege of adding your name on our list of satisfied customers.

	Queen	2-Lb. Pkg.	3-Lb. Pkg.
1-24	$1.25	$4.00	$5.10
25-99	1.15	3.75	4.80
100-up	1.05	3.50	4.50

Send us your queen orders.
Apiaries accredited and certified by the Alabama Dept. of Agriculture.

O. K. ANDERSON & SON
COFFEE SPRINGS, ALABAMA

American Bee Journal

HAMILTON, ILLINOIS
August 1945 Vol. LXXXV, No. 8

Managing Editor—G. H. Cale.
Associate Editors
M. G. Dadant, Frank C. Pellett,
J. C. Dadant, Roy A. Grout

Published monthly at Hamilton, Illinois. Entered as second class matter at the Postoffice at Hamilton, Illinois. In United States, Canada and Mexico. $1.00 a year; two years $1.50; three years $2.00; Foreign $1.25 a year; two years $2.00; three years $2.75. Subscription stopped at expiration printed on wrapper.

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Also resistance queens direct from government resistance stock.
2-lbs. bees and queens $3.60
3-lbs. bees and queens 4.65
4-lbs. bees and queens 5.70

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EL DORADO, ARKANSAS

Italians & Caucasians
Queens rest of season
$90 per 100
D. T. WINSLETT
1015 Sonoma Ave.
NO. SACRAMENTO 15, CALIFORNIA

Italian Queens
90c each
—any quantity
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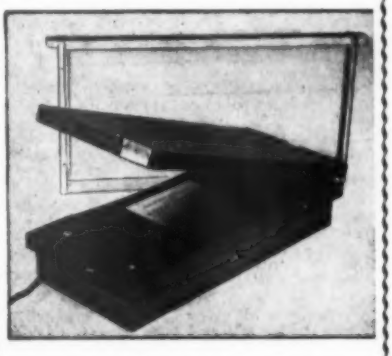
The Puett Company
Hahira, Georgia



Carpenter's Electric Embedder
PATENT PENDING
"Better Bee-Havior"
COPYR.
"It's Complete, It's Simple,
It's Speedy, It's Accurate"
This machine embeds all four wires at once, evenly, and handles crimp-wired foundation.
Terms, $7.50 Cash, f. o. b. Riverside.
Dealers very satisfactory discounts.
Shipping wt. approximately 5½ lbs.

G. A. CARPENTER
4266 Homewood Court
RIVERSIDE, CALIFORNIA

Bright 3-Banded Italian Queens

The kind that every beekeeper is proud to get. Gentle, good honey producers. Prices balance of season. 1 to 24, $1.10; 25 to 99, $1.00; 100 up $ .90.

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LUVERNE, ALABAMA

AMERICAN RABBIT JOURNAL
. . Shows the Way to Success

Gives the latest news and views of the rabbit world—an illustrated monthly magazine of general and educational features. One year $1.00; three years, $2.00; sample 15c.
AMERICAN RABBIT JOURNAL
Dept. S. Warrenton, Missouri

PETTIT'S PACKAGE BEES and QUEENS

Our twenty-first shipping season has gone by and we thank the Great Giver for good weather, our many friends for good business and the Express Companies for good transportation.

Orders for 1946 are already being booked, subject to agreement on prices in November.

Summer Prices for our good queens of three-banded Italian stock, June through September.

Quantity 1-11, $1.00 each. 12-99, 90c each.
100 and up 80c each.

Please send cash in U.S. funds with order. If Canadians send 10% extra, we will attach Canadian Customs Stamps to prevent delay.

MORLEY PETTIT, Tifton, Ga.

NEEDED SUPPLIES—HARD TO BUY (We Have Them)

No. 14—4 frame Non-Reversible Extractor, Hand Power	$14.75
No. 6—2 Frame Non-Reversible Extractor, Hand Power	11.75
10 Frame Wire Queen Excluders, Wood Bound, 5 or more, each	.80
25 Lb. Lots Thin Surplus Foundation (following sizes) 3⅞x16, 4½x16½, 4⅛x17¼, 3 11/16x14¼	19.75
25 Lb. Lots "Hercules" Plain Brood Foundation	17.50
25 Lb. Lots "Hercules" Wired Brood Foundation	18.50
Brood Foundation, Sizes 8x16¾ or 8½x16½.	
HAVE YOU TRIED "HERCULES" WIRED IRONSIDES FOUNDATION? WITHOUT A DOUBT THE BEST FOUNDATION ON THE MARKET	
100 Sheets $12.50 — 50 Sheets $6.50 — 10 Sheets $1.35	
8½x16½ ONLY	
2 Lb. Package Bees with Queen (untested-untreated	$ 3.50
3 Lb. Package Bees with Queen (untested-untreated)	4.50
1 Queen Bee, Ultra Violet Ray Treated, each	1.25
Wire Face Bee Veil, each	.80
Bee Escapes, each	.12
Smokers 4x7 each,	1.00
2 Inch Hive Staples, per lb.	.30
COMB HONEY SECTIONS—	
No. 1 Grade, 4¼x4¼x1⅞, per 500	6.60
No. 2 Grade, 4¼x4¼x1⅞, per 500	5.90
No. 1 Grade, 4¼x4¼x1⅞, split 3 sides, per 500	7.10
Cellophane Wrappers for above sections, per 100 sheets	1.25
Cellophane Wrappers for above sections, per 500 sheets	5.50
1 Lb. Glass Honey Jars, packed 2 dozen, per case	1.00
2 Lb. Glass Honey Jars, packed 1 dozen, per case	.90
5 Lb. Glass Honey Jars, packed ½ dozen, per case	.55
5 Lb. Friction Top Cans, packed 50, per carton	3.75
10 Lb. Friction Top Cans, packed 50, per carton	5.00
Bee Gloves, per pair	.75

TERMS: CASH WITH ORDER, F. O. B. CINCINNATI
WE WILL BUY YOUR HONEY AND BEESWAX AND PAY THE CEILING PRICES
NO LOT TOO SMALL OR TOO LARGE. WRITE US.
We also render wax from your old comb or cappings and work wax into comb foundation. Write for our general price list.

THE FRED W. MUTH COMPANY 229 WALNUT STREET CINCINNATI, 2, OHIO

SUNKIST BEES AND QUEENS

Another season is passed and we filled all orders as and when wanted. This means our customers received satisfaction. We are getting ready for next season now so as to maintain these satisfactory contacts. We are accepting orders for 1946 for packages and queens, subject to prices later in the year. We have three banded Italians, offer health certificate and guarantee live delivery.

SUNKIST BEE COMPANY, Route 2, Box 9, Houma, La.

ITALIANS — **QUEENS** — **CAUCASIANS**

Daughters of Queens Bred for Resistance — Bred to Italian Drones

90 CENTS EACH, BALANCE OF SEASON

2-Lb. pkg. bees with queen $4.00
3-Lb. pkg. bees with queen 5.00

Over 25 years a shipper in U. S. A. and Canada. Send for free circular

BLUE BONNET APIARIES

Route 1, Box 70, Mercedes, Texas

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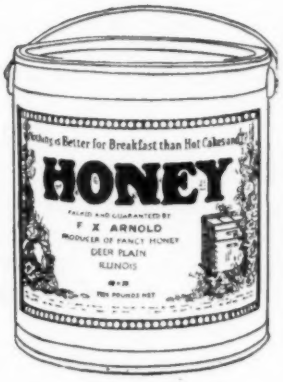
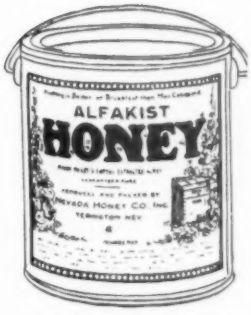
BUY BONDS
. . AND . .
HOLD THEM

• HONEY CONTAINERS •





Send for our catalog of labels for all your containers.

5 and 10 Lb. Pails With Bails Now Available

5 lb. size, 50 per carton $3.15
10 lb. size, 50 per carton 4.90

No bails with these jars.

Bails are not available

Glass Jars

We have a good stock of glass jars ready for prompt shipment. Our jars are the "Victory" style round jars packed in substantial cartons equipped with lacquered paper lined caps.

PRICES

Case of 48— 8 oz. ____15 lbs.		**$1.30** per case
Case of 24—16 oz. ____12 lbs.		**.75** per case
Case of 12—32 oz. ____ 9 lbs.		**.50** per case
Case of 12—48 oz. ____11 lbs.		**.55** per case
Case of 6— 5 lb. (no bails) 10 lbs.		**.42** per case
Case of 4—10 lb. (no bails) 13 lbs.		**.45** per case

Window Carton

Comb Honey Wrappers and Cartons

The best and most economical wrapper on the market. Our revelation flat wrappers and bag wrappers are made with cellophane and waxed paper and printed attractively so as to make best possible display of comb honey. These wrappers are much cheaper than the all cellophane wrappers and more easily handled. For a strictly fancy product, the window cartons are of unusual value.

	100	500	100	500
649 Revelation style for 4¼ in. sections ____	1 lb.	4 lbs.	$ .90	$3.95
664 Revelation style for 4¼, unprinted ____	1 lb.	4 lbs.	.60	2.70
658 Bag style for 4¼x1⅞ sections ____ (Special Sale Price)	1 lb.	5 lbs.	.75	3.50
430 Bag filler device, weight 2 lbs., each			—	.50

Window Cartons for 4¼x1⅞, 4¼x1½, and 4x5x1⅜ Sections
Prices—100 for $1.00; 500, $4.50; 1000, $8.75. Wt. 6½ lbs. per 100
Postage Extra on All Above.

60-lb. Cans

Standard square 2⅛" screw cap cans in stock ready for shipment.

PRICES

Packed in single cartons____	$ .45 each
Packed 16 in a carton____	5.50 per carton
In bulk (no cartons) ____	.31 each

Quantity Cash With Order Discounts

On an order of $50.00 or more at one time 5%.

On an order of $100.00 or more at one time 10%.

Dadant & Sons : : : : Hamilton, Ill.

QUEENS 3-Banded Italians QUEENS

Carefully selected and produced for their honey gathering qualities.
JUNE 1ST TO OCTOBER 1ST.

1 to 11	$1.00 each
12 to 49	.90 each
50 or more	.80 each

Parcel post prepaid.

Health certificate and live delivery guaranteed.

JOHN C. HOGG **Tifton, Georgia**

Wish to thank all who have been so patient and understanding in our effort to deliver your bees under war conditions, as well as those who have not been able to get bees from us.

We hope in the future to be able to supply more PACKAGE BEES with even better delivery service. There have been some delays which were beyond our control that upset the entire spring schedule. We sincerely hope you were not badly put out by this and will remember the labor shortage has hit us also. We expect to ship bees next year and look forward to your order next January.

ROSSMAN & LONG

P. O. Box 133 **Moultrie, Georgia**

"HONEY GIRL" ITALIAN QUEENS

1 to 3, 90c each. 4 to 11, 80c each. 12 up, 75c each. 100 or more, 70c each
Will ship in lots to suit your needs.
Twenty odd years of selective breeding for hardiness, productivity and other qualities you will like when you stock "HONEY GIRL" Italians.
Queens received dead will be replaced if returned promptly in their own cage. Certificate of inspection with each shipment.

St. Romain's "Honey Girl" Apiaries
Moreauville, Louisiana

• Prompt Shipment on Queens •

ITALIAN AND CAUCASIANS

As Good As the Best **$1.00 each**

Book your 1946 packages NOW

WEAVER APIARIES, Navasota, Texas

Comb Honey Wanted

Advise the quantity, grade, size section, and how packed.

Frank H. Hauck
P. O. Box 84, Kew Gardens, N. Y.
Bank references furnished on request

CANADIAN BEE JOURNAL

Canadian beekeepers too have wartime problems. If you are interested in bee activities "North of the Border," send us your subscription NOW. We will see that you receive each monthly copy regularly.
Subscription price, $1.25 per year in U. S. A.

CANADIAN BEE JOURNAL
OSHAWA, ONTARIO

Italian Package Bees and Queens

2-lb. package with queen	$4.00
3-lb. package with queen	5.00
Queens, each	1.25

Add 25c per package for orders of less than 50 packages.

•

JOHN S. SHACKELFORD
LIVE OAK, CALIFORNIA

BEE STINGS

Pheno-Isolin instantly stops the pain and quickly reduces the swelling. Results guaranteed. 4-oz. bottle $1.00 postpaid.

THE FORCE CO.
SCRANTON 10, PENNSYLVANIA

KOEHNEN'S
Package Bees and Queens
For Quality and Service
KOEHNEN'S APIARIES
GLENN, CALIFORNIA

Italian Package Bees and Queens

	2-Lb.	3-Lb.	4-Lb.	Qu'ns
1 to 24	$4.00	$5.10	$6.00	$1.25
24 to 99	3.75	4.80	5.85	1.15
100 up	3.50	4.50	5.50	1.05

Kermit Anderson
COFFEE SPRINGS, ALABAMA

MAGIC ELECTRIC WELDER

110 volt AC-DC; welds, brazes, solders, cuts all metals; easy to use; full directions. Complete with power unit, flame and metallic arc attachments, carbons, fluxes, rods, mask. Used by the navy. Guaranteed for one year. Splendid for farm use. Only $19.95.

MAGIC WELDER MFG. CO.
241 CA Canal St. New York City

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A COLONY is no better than its QUEEN

A Honey Crop is no better than your Average Colony

—so don't take chances with old worn-out queens. Head all your colonies with a good young **Stover Queen.** We will clip them or send by air mail at no extra cost; replace any which are lost in transit; or are not satisfactory in every respect. Our reputation is at stake on every order. We want to keep it good. We have been specializing in package bees and queens for more than thirty years.

ITALIANS or CAUCASIANS
for prompt shipment

PRICES	
1 to 24	$1.10 each
25 to 99	1.00 each
100 or more	.90 each

The Stover Apiaries : Mayhew, Miss.

WANT TO KEEP POST-WAR HONEY PRICES UP?

The Answer is in Your Own Hands—NOW!

HONEY brings big prices when sugar is scarce. But when rationing ends, what about postwar prices? H. J. Heinz Company—makers of the famous 57 Varieties—is in the honey business, with a nation-wide organization of 1500 salesmen and powerful advertising resources to market millions of pounds of honey annually—*not as a sugar substitute* but on the *superior merits* of honey as a food.

We're Now Contracting for Honey

If you want to support a strong stabilizing influence in the honey market—

If you want to establish a *permanent* and *profitable* outlet for your honey production at top prices—

You'd Do Well to Sell Part of Your Honey Crop to Us

We need volume—and we pay top prices. Furthermore, we feel that our business and merchandising experience qualify us to help you and the rest of the honey industry. Let's get together!

—CLIP AND MAIL THIS COUPON TODAY!—

H. J. HEINZ COMPANY, Dept. AB-8
Pittsburgh, Pa.

I expect to produce _____ *lbs. of honey in 1945. It will be ready about* _____

Name _____

City _____

State _____

Sending in this coupon does not obligate me in any way.

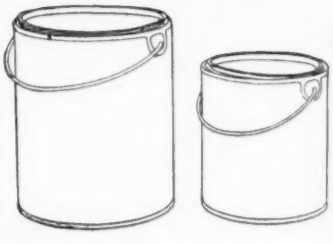
1945 Prices on Tin and Glass Containers

Glass jars in reshipping cartons F. O. B. the shipping points shown, including caps, whatever style available, without bails, priced as follows:

1 lb. jars, packed 24/c, wt. 12 lbs.	80c per 24
2 lb. jars, packed 12/c, wt. 9 lbs.	52c per 12
3 lb. jars, packed 12/c, wt. 11 lbs.	56c per 12
5 lb. jars, packed 6/c, wt. 10 lbs.	45c per 6
10 lb. jars, packed 10/c, wt. 17 lbs.*	75c per 6

*Stocked F. O. B. Watertown only.

Above prices on glass jars apply F. O. B. any of the shipping points of the G. B. Lewis Company indicated below. Send your order and remittance to the nearest shipping point to save freight.



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5 lb. pails, packed 50/c, $3.20	50 @ $3.30, wt. 27 lbs.
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When you order from the G. B. Lewis Company use the following addresses, choosing shipping point nearest you; P. O. Box 825, Albany 1, N. Y.; P. O. Box 683, Lynchburg, Va.; 214 Pearl St., Sioux City 14, Iowa; and Watertown, Wisconsin. Orders exceeding $50.00 for tin or glass or both deduct 5%, exceeding $100.00 deduct 10%. All prices subject to change without notice.

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G. B. LEWIS COMPANY

WATERTOWN, WISCONSIN

Box 825, Albany, 1, N. Y.; Box 683, Lynchburg, Va.; 214 Pearl St., Sioux City, 14, Iowa

WHAT DO YOU THINK?

Should the Beekeeper Just Keep Bees, Or Should He Diversify?

ON the average I think the beekeeper should diversify. Specialists, especially in a time of war, have been hit hard. During the depression, the small operator could get along under diversity. I have operated 250 to 300 colonies in connection with a vegetable roadside market, raising strawberries, raspberries, blackberries, sweet corn, tomatoes, melons, cucumbers, beans and mangoes. The bees improve all of these products except the tomatoes and mangoes. In producing these crops, I find the bees fit in well. I do not get large crops of honey, but the quality is high.

I also diversify in the honey crop by producing section honey as well as special shallow frame comb honey and extracted honey. I have never had a complete failure of any of these products in fifteen years. Some years a few products may fail to bring in a satisfactory return, but the average is good each season.

The work balances nicely too. I prepare my honey supers in the winter months, when vegetable work is at a minimum. I do the honey extracting when vegetable work is at the lowest point. The selling works out well. Many people drive out to buy honey and get vegetables. Others come for vegetables and can't resist the honey. I also have time to work a day shift in an essential industry in winter, so I think it is best to diversify. "Don't carry all your eggs in one basket." Some may say, "A jack of all trades; and master of none." My reply is "Variety is the spice of life."

Harry T. Starnes, Indiana.

—V—

It depends on conditions which may permit or hinder the proper attention to different interests. In case the honey crop is a failure, other lines often pay, and the beekeeper who can have other farm interests will benefit. Nevertheless, the beekeeper with outyards, scattered far or near, may not be able to give every day care to side lines.

On the other hand, the beekeeper who has perhaps only enough bees to require half of his time can well afford to engage either in selling his own product to advantage or having some other line of business of his own. I had a line of direct sale for family remedies and remedies for stock and poultry, sold honey, picked up beeswax and honey, and traveled in this way for many years. I bought honey at the farm and sold it to other markets at a profit. It helped me in developing sales of honey over a wide territory.

The roadside stand should be a steady source of profit, especially when the family helps out. In such a case, it is practical to add a limited stock of farm products, groceries which can be carried at no selling cost.

If the beekeeper has enough bees to require all of his time, he faces the question of help and he also faces the problem of honey sources. He may have to sow clovers either on his farm or his neighbor's, and go into a seed business. It is not uncommon for a seed crop to return a cash value equal to the land in a few years.

The beekeeper who is skillful in his business will also find it possible to buy the crops of others who are not suited to marketing, thus helping the neighbor and making a profit on his own selling.

J. H. Sturdevant,
Nebraska.

—V—

W. Z. Hutchinson said: "Keep more bees." If the beekeeper can make a profit with a few bees, with experience he should make more profit with more bees. On the other hand, if he must depend on other work to make a living, it is better to drop the bees, at least from the standpoint of profit.

I have never yet seen where a man could keep bees commercially along with some other kind of work. One or the other suffers. I have been tempted several times to take on something else and diversify, but fortunately have stayed with bees entirely with fair success. However, if you keep bees just for pleasure, diversify to your heart's content but if you are beekeeping to make a living, keep more bees and keep them better.

Charles Mraz, Vermont.

—V—

The beekeeping business though two thousand or more years old is more specialized than ever and we still have a lot to learn. It demands specialists, that make it a study. It does not go in well with any other business without one or the other being neglected. The genuine dyed-in-the-wool beekeeper sooner or later enlarges his bees until he is a full time specialist which is as it should be. Beekeeping is a real business and beekeepers are born, not made.

Arnt Arneson,
Wisconsin.

—V—

Both diversification and specialization have advantages. A specialist has nothing in his way to keep him from his planned work. On the other hand, if crops fail to materialize he is out, if his bees are in one spot.

If he diversifies, his attention is divided among several lines of work, and he often does not know just what to do first, there being many cares at the same time. He may control his honey flora if he owns land.

So each case must be judged separately depending on the locality and the individual. If you have many bees in different outapiaries in a good spot, you had better stick to straight beekeeping. If on the other hand the honey flora is vanishing, maybe you should diversify.

M. R. Vikla,
Minnesota.

—V—

What is the Future of Commercial Beekeeping?

I think the future for the commercial beekeeper is good and will continue so. As a small beekeeper I do not know what changes the large producer needs. He does need more help, more bees and more pasture.

As for the migratory beekeeper he performs a useful function when he goes from place to place for honey. This insures a greater spread of pollination service.

The small beekeeper produces honey for local use and he too serves the great demand for pollination and is too little recognized for this service. I am confident that this country will continue to lead in good modern beekeeping.

Thos. Hutson, Michigan.

—V—

This question answers itself. It is time for people to stop "keeping bees" and let the bees keep them. I think it is time to diversify.

For the large commercial beekeepers, he must undertake something that will demand employment of additional labor as the labor he has on hand will probably be most profitably employed in year round

LET US CATCH UP

Quite a few have written for this feature and their material has not appeared. Each month there is more than can be used on the space available. We will try to catch up in the next few issues and then propose another question. Thank you very much for the contributions that have been made.

beekeeping but the less than commercial beekeepers will have plenty of time for something else. This is where diversification should begin.

What will be the accompanying work? Poultry, fruit, vegetables, hogs, the amount governed by the time from bees.

Bees do not return a high profit every year. Neither do these other things but one man can depend on at least one for profit so there is a fair chance of breaking even and not suffering a loss.

Andrew Carnegie's advice to "put all eggs in one basket and then watch the basket" may apply to the commercial beekeeper but others might say "put the eggs in several baskets then if you fall down and break one basket there are others left."

J. L. Jordon,
North Carolina.

—V—

We have beginners, hobbyists, sideliners, and commercial beekeepers; Some beekeepers are producers, packers, distributors and salesmen. Few businesses could survive such conditions. When sugar is ration free honey will have to take its place in competition. Now help is scarce and the pay too small. There is a limit therefore to the number of bees the trained operator can take care of and show a profit. The commercial man now has all his equipment working and yards filled. Often he kills in fall and replaces with packages. I believe migratory beekeeping may become more general. The larger outfits are doubtful and there will be a tendency towards smaller ones.

W. Frank, Iowa.

—V—

The future of large commercial beekeeping depends on the future of the honey market. If the demand for honey is large commercial beekeepers will be encouraged to continue and small beekeepers will be encouraged to expand. Rationing of sugar gave honey a tremendous impetus which may be lost when sugar is plentiful. Honey has been much advertised lately but it has not made the housewife feel she must have honey. It will take "must" advertising to take honey out of the food luxury class. I see a few large commercial beekeepers and, competing with them, cooperatives for the small beekeepers. The cooperative method is sensible and reasonable. The future of the world depends on cooperation and the future beekeeping will be cooperative also.

Violet Keseth, Montana.

—V—

KEEP BUYING BONDS

Who's It?

THIS young man poses with his two sisters. Born on city streets, nurtured in the turmoil and topsy-turvydom of one of the largest cities in the world, he escaped in good time to the country side to the peace and quiet of the apiaries of one of America's leading comb honey producers. But the bee fever hit him hard. Now he is a beekeeper in his own right and one of these hard working individuals known as an apiary inspector.

That's almost saying too much. Many the time he has been called the unknown, month by month. Now just who is he? Send your answer by the fifteenth of the month. Correct answer, three months extension; incorrect-well just try again.

Last Month—Left to Right—H. C. Dadant, M. G. Dadant, L. C. Dadant

Here an up-to-date picture (1936) with their father C. P. Dadant.

The promise was if all three were named, nine months subscription; two, six months; one, three months.

Most guessed the center individual to be Henry. It is Maurice. Cute, isn't he? The self-appointed guardian, the big boy on the right, Louis (L.C.) Demure accompanist, Henry, (H.C.) on the left.

Probably Eldon Martin of Goodland, Missouri does a better job of sleuthing in the guesses than anyone else and he says that this is the hardest yet. "I am working in the hay harvest away from home and haven't had time to look in my past Bee Journals. I don't know that they would do me any good if I did have them. The question is are they all of the same family or from different families? If from the same family what one would it be other than the Dadant family? It looks odd they would all have a similar necktie. So I guess, H. C. Dadant, M. G. Dadant and L. C. Dadant." Absolutely correct, Eldon. So you can at least

(Please turn to page 290)

FUTURE RESEARCH IN BEEKEEPING

JAS. I. HAMBLETON,
United States Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine.

NO one knows what the future holds. The best we can do is to express our wishes or hopes, and since these are prompted largely by current happenings or conditions, any discussion of future research in apiculture has to be based on needs of the beekeeping industry. Beekeeping has many ramifications. With only a short space at my disposal, it is hardly possible to cover the entire field or to explain satisfactorily even the most outstanding needs.

Pollination. One of the "musts" in the future research program is to determine more exactly how important honeybees are in our American agriculture. Large claims have been made as to the value of honeybees in pollination. We have heard that their pollinating activities are worth 10 to 30 times as much as the honey they produce. No doubt there is truth in such figures, and perhaps even higher amounts could be given, especially where good brood rearing is maintained but the honey crop fails to materialize. Whatever the answer as to their worth, let us be reasonable. For instance, bees cannot be given entire credit for a good crop of apples. Spraying, pruning, fertilizing and harvesting each contributes a share.

At present we lack standards by which to judge how many bees are needed to pollinate a given acreage of fruit or seed crop. The usual recommendation of one colony per acre has no scientific basis. Colonies vary tremendously in size. A small colony cannot do the work of a large one. Plant species that vary in richness of nectar compete for the visitation of bees. This competition determines how freely the available bees will visit the blossoms and, in the end, effect pollination.

We must learn how to manage colonies for the specific job of pollination. Will this be through control of their pollen intake, by regulating the amount of brood a colony is made to care for or by some expediency such as using colonies with extra large field forces? The strain of bees may have a bearing. Location of apiaries with respect to the crops requiring pollination needs study. The Russians are attempting to train bees to concentrate their activities on a given crop. Elimination of competing flora may help. There are many possibilities.

Seed and fruit growers will benefit more directly through such research than will beekeepers, but in the end many beekeepers may operate yards primarily as a pollination service, on a pay or some other compensatory basis, with honey production as a secondary incentive.

The scanty and far-below-maximum yields obtained from many insect-pollinated crops will make it necessary some day for the agricultural economists to balance the value of the honey crop against the value of bees in pollination. There is no doubt but that the balance will dip greatly in favor of the latter. Here we encounter a peculiar chain of circumstances. Honeybees cannot maintain themselves in any numbers in a wild state. They are dependent on man. Bees are kept because of the honey they produce. A beekeeper's interest in bees is therefore determined by the price he receives for his honey. The question will then be, is it good economy to permit unfavorable honey prices to interfere so greatly with the production of over 50 important agricultural crops?

Honey Plants. Nectar secretion and pollen production in plants will need to be studied as a foundation for the most effective utilization of bees for pollination. At the moment no one knows just why plants secrete nectar or much about the factors that affect nectar secretion. Instead of introducing new honey plants to improve bee pasturage, perhaps more headway can be made and a better groundwork laid if, through breeding and selection, nectar secretion can be increased, both in quantity and quality, in some of our existing cultivated honey plants.

The farmer of the future is going to give more consideration in his planting program to competition among plants for bee visitation. He will learn to avoid planting a secondary crop that will draw the bees away from a primary one which requires pollination for seed or fruit production. In specialized seed-growing areas it may become necessary to prohibit the growing of certain honey plants, not only to obtain ample pollination, but to insure the purity of seeds. Sweet clover in the vicinity of alfalfa grown for seed is an aggravation and a detriment; thus it may not be a good practice in all places to line highways with sweet clover. Pollinating insects bring about cross fertilization between Ladino white clover and the common white clover. It might become essential to regulate the growing of these two clovers, as well as bee populations, in areas where certified seed is raised.

Breeding. Sufficient work has been done to show that strains of bees differ greatly in productivity. But how are queen breeders going to maintain and guarantee strains of outstanding merit? Many of them are conscientiously trying to do so, however, numerous unknown factors interfere. To illustrate how little we know about the whole question of breeding and inheritance in the honeybee, it is only necessary to mention Otto Mackensen's work. He has been able to produce fully developed virgin queens without mating of any sort. He has also raised virgin queens from worker bee eggs. If we are to produce better bees much fundamental work has to be done.

A breeding program should not have for its sole aim the development of highly productive strains. Small beekeepers and amateurs, who constitute a large part of our industry both in membership and in total number of colonies, will need something else. A gentle strain of bees, resistant to disease and having other desirable characteristics, might be more desirable than a highly productive strain difficult to handle and subject to disease. Then one must not forget that bee fanciers have a place in the industry. There is no reason why their aesthetic sense should not be satisfied through the development of strains having striking coloration and markings. All

bees will play some part in pollination, irrespective of breed, color, or disposition.

Bee Diseases. Not so long ago our knowledge of bee diseases seems to have reached a certain peak and then leveled off. The causative organisms of the most prevalent diseases were known. Methods of control were fairly well standardized. Research on resistance of honeybees to American foulbrood is changing the picture.

Such work gives hope that the ravages of this disease can be minimized through careful selection and breeding, and by eliminating highly susceptible stock. What is the significance of the pronounced difference in susceptibility to American foulbrood in the same strain of bees when kept in different parts of the country? Why is there so little American foulbrood in the South in comparison with the North? The riddle of European foulbrood has never been solved, and this disease is by no means a thing of the past. Last year thirteen per cent of all bee disease samples submitted to the Department of Agriculture for diagnosis were European foulbrood. Why is it that some of the experimental strains that show pronounced resistance to American foulbrood fall ready prey to European foulbrood?

How much do we know about the spread of bee diseases? We know that American foulbrood can be transferred from hive to hive by means of infected honey and combs, but we have little or no proof of the part robber bees play in disseminating the disease. How important are bee trees and stray swarms? Is beekeeping equipment such as used hive bodies, bottom boards, etc., a factor in the spread of the disease? We have largely assumed that our methods of washing or scorching hive bodies are good or necessary. Definite proof is lacking.

The status of diseases and abnormalities of adult bees in general is confusing. Recent observations on Nosema disease leaves little doubt that it constitutes a serious menace to beekeeping. Its existence is widespread. It has long been known. Many losses caused by it apparently have been attributed to other troubles which can be grouped with miscellaneous ailments ranging from supersedure to disappearing disease. No control measures are known.

The inspection service is in position to add materially to our knowledge of bee diseases and to the growth of the industry. Could greater advances be made if the inspection work were not quite so stereotyped and conventionalized? Could beekeeping be furthered through revision and standardization of apiary inspection? The inspection service should be cognizant of the part bees play in pollination and lend their good offices in furtherance of their use for such purpose.

Poisoning. In the nationwide effort to control injurious insects, honeybees and wild pollinating insects have become unintentional victims. Today in some localities beekeeping can be conducted only at great hazard, and the effect of this discouragement to beekeepers, and of the decimation of native pollinating insects, is amply evident in low yields from insect-pollinated crops. This downward trend will have to be stopped sometime. With new and more deadly insecticides on the horizon the plight of the beekeeper will undoubtedly become worse before it can improve. With the country's history of indifference to our beneficial insects, an educational program backed by sound research will be needed before beekeepers can expect a greater margin of safety than they now have. No one knows the solution to this perplexing problem.

Beekeeping Equipment. Although we possess a very satisfactory type of hive, do we yet have what we want? The divergence of opinion on this subject suggests that the best hive is still to be developed. The advantages of using large colonies call for something better than we now have in hive design and construction. Plans for constructing a honey house for the economical and efficient handling of, say, 5 tons of honey—50 tons—5,000 tons are nonexistent. Does exposure of honey to light and air impair its good qualities? How can granulation, fermentation, and moisture content be controlled without injury to the honey? Are we going to permit comb honey to pass out of existence because of difficulties in its production and marketing?

Bee Management. This field covers such a wide endeavor that it is impossible to do justice to it here. Nothing in bee management should be considered finished. What of such problems as wintering; the production, shipment, and use of package bees; feeding pollen; pollen substitutes and supplements? Swarm control, introduction of queens, supersedure, the use of highly productive strains, queen rearing—all these are old yet new questions.

Bee Products. Up to now the principal returns from the apiary have come from the sale of honey and beeswax, with a minor income from the use of bees for pollination in some of the fruit areas. Once the facts and figures are available, seed growers will probably find that having bees in abundance in their seed fields pays them even higher dividends than it has paid the fruit grower. It might even prove profitable to maintain bees for pollination in places where bees cannot be kept profitably for honey production alone.

What of pollen as a possible apiary product? Sufficient experimentation has been done to indicate that it could be produced in ton lots. It is a source of natural vitamins, minerals, hormones, proteins, and fats. It is not too much out of line to suppose that pollen may some day find a place in human foods or for therapeutic purposes. Beekeepers are the only ones who can produce pollen in abundance and at a reasonable cost.

Without doubt the bee industry itself could use large amounts of this product. Where pollen is unusually abundant, it could be shipped to places of scarcity. A sack of pollen with every package of bees would unquestionably be good insurance. We must learn, however, how to produce pollen most economically and where it can be produced best, and we must develop methods for storing and marketing it.

Research on honey is almost at a standstill.

Economic Research. As old as beekeeping is, we still lack data as to the number of beekeepers and the size of the honey crop. One person's guess is as good as another's. The figures of the Bureau of Census on bees and honey are inadequate. Figures quoted can be neither proved nor disproved. No data are available as to the movement of carlots of honey. We do not know how much honey is handled by commercial packers or how much is used in industry. Without such information it is hardly possible for the industry to work out plans for the orderly marketing of honey. We need to know more about honey imports and exports and their effect on our domestic honey market. Market quotations on honey are few and not readily available. Periodic market quotations on many agricultural products are commonplace, but mention of honey is conspicuously absent.

Little information is available as to the costs involved in the packing and marketing of honey. Honey containers can be improved and standardized. Generally speaking, our honey labels are not in keeping with the high quality of our product. Under what circumstances is it feasible for a producer to pack and retail his own honey? What economic factors are involved in the cooperative marketing of honey? Such questions go begging for answers.

Promotion of Research. The total money expended for beekeeping research in the United States does not exceed $150,000 a year. This is indeed a small amount in comparison to the value of bees in pollination and the annual crop of honey and beeswax, a figure that runs into millions of dollars. Many of our

experiment stations and agricultural colleges are not doing any research aimed at either improving the production of honey and beeswax, or using bees in pollination.

Are we content to let matters rest as they are? Should not the industry adopt a comprehensive research program and plan ways and means to finance it?

—v—

Buckwheat is grown extensively. Above is a field of it in Sao Paulo, Brazil.

BUCKWHEAT--OUR COVER PICTURE

THE cover is a picture of a field of buckwheat in Otago County, New York, sent to us by the United States Department of Agriculture, and taken by Ackerman.

Buckwheat is one of the most important sources of surplus honey in the region of the Great Lakes. For heavy yields it requires a moist climate and a sandy soil. The late J. E. Crane wrote that he had secured but two good crops of honey from buckwheat in sixty years from fields grown on clay soils.

While an occasional crop of buckwheat honey is harvested in the Mississippi Valley, there is no dependence upon its yield in this region. The summers are too warm and humidity is usually too low to favor its nectar secretion. Ontario, New York, Pennsylvania, Ohio and Michigan are the localities where the big crops of buckwheat honey are harvested with regularity.

One beekeeper located in a buckwheat neighborhood reported that one acre would support about seven or eight colonies of bees profitably. Nowhere else do we find such large apiaries as formerly were kept in good buckwheat territory in New York. When the crop declined in popularity and was replaced by other grains or pastures the size of the apiaries declined substantially. The Alexander apiary at Delansen, New York, where 700 hives were kept in one yard was among the most famous in years gone by.

The honey is very dark and has a strong flavor but is much favored by those who learned to appreciate its special quality in youth. To those who have been familiar with mild and light colored honey it is likely to be distasteful. When the flow is heavy there is likely to be a strong odor present in the apiary which at times is rather unpleasant. When fully ripened it is often so thick as to be hard to extract.

Beekeepers living in New York report heaviest yields when clear and still days follow cool nights. The flow is usually over by mid-afternoon. When temperatures drop to 65 degrees or below the yield is likely to be light.

The buckwheat plant requires only a short season in which to reach maturity and for this season is often planted as a catch crop to replace others which have failed to secure a stand from earlier planting. Since the honeyflow comes late in the season it is often possible to secure a crop of buckwheat honey in neighborhoods where an earlier flow has already been harvested from other sources.

LEAGUE IMPROVEMENT AND SEED STUDIES

A recent conference with Director Cardon of the Agricultural Research Administration, U. S. D. A. represents a step in a united effort of nation wide organization to gain consideration for an expanded program of research in improvement of legumes and increased seed production including studies of nectar secretion and pollination factors.

The following organizations are behind this movement: American Seed Trade Association, Field Seed Institute of North America, International Crop Improvement Association, National Council of Farmer Co-operatives and our own National Federation of State Beekeepers Associations.

Legumes are the key-stone of a prominent balanced agriculture. At least a 25% increase in forage crop acreage including legumes is needed in the post war period to replace a part of war crop acreage for soil improvement and maintenance of high soil productivity. New varieties of legumes are needed and adequate seed supplies of all the basic legumes, including alfalfa and clovers are needed.

Obviously this is a national project and must be supported by the federal government for adequate interstate programs.

Representatives of the various organizations indicated proposed to Director Cardon that an annual appropriation of $500,000 be included in the budget starting July 1, 1946, to underwrite research and agricultural promotion in the field of forage crop studies including legumes throughout the nation including the South.

Among the proposals it has been recommended a reasonable proportion of the appropriation be assigned to studies on insects affecting the pollination of legumes, including presumably nectar secretion, and that this work shall be conducted by the office of Bee Culture, U. S. D. A. under the direction of Mr. Hambleton. The whole program of course affects the beekeeper seriously in that the net result is bound to be a quickened interest in the entire agricultural field on pollination and seed production and on the extended use of legumes in farm practices for all purposes. Therefore it is a program which should receive the hearty support of beekeepers and groups and associations throughout the nation.

It is suggested that in support of this program beekeepers should contact their congressmen and lawmakers wherever possible and as soon as possible. Futher information will probably be available as time goes on. At least do your part.

PACKAGE BEES VS. OVERWINTERED COLONIES

By GEO. HARRISON, Jr.

I am making an experiment on the subject this year and cannot give any definite conclusions at this time but will endeavor to make some deductions, based on known facts, and leave definite conclusions to a later date.

Fruit bloom was over here this spring, three weeks or more, ahead of time, which was unfortunate for the experiment as the package bees were ordered to arrive for the average season. Apples started to come into bloom on March 30 this year after a month of June weather. The average time is the latter part of April or the first of May.

On March 30 I hived fifteen 3-lb. packages of bees which cost me $69.75 plus $4.92 expressage, total $74.67. On April 5th three were found queenless and I distributed the queenless bees among the other packages. This left me 12 colonies of bees at the cost of $6.22¼ each. To pay for themselves with no margin of profit, these bees will have to produce an average of 52 pounds of honey at the ceiling price of 12 cents. I can't conceive of their doing it in an average season. If they do I am going to have a bumper crop such as I never had before. Our average expectations, covering a period of years, is about 50 pounds from overwintered colonies under good beekeeping practices.

On the date I hived these packages I had just completed preparations for moving 133 colonies of overwintered bees to the apple orchards. These colonies averaged from three to five combs containing brood in all stages, with many emerged bees in most. Could the packages just hived compete with these colonies, especially if in a good early flow?

As an illustration of the competition I will cite 10 overwintered colonies in ten frame, single story, standard hives removed from an orchard, April 15. These 10 colonies went into the orchard with just enough honey to tide them over a period of bad weather, which they didn't have. On removal from the orchard they weighed so much that I was afraid that brood rearing was being restricted. They were ready for supers if for no other purpose than to relieve the conjested condition.

Last year a yard in the Tulip tree region produced a surplus of about 50 pounds per colony from that source. Tulip opened last year on May 18. The weather was good during its bloom period. I might add that was about all the surplus they got. During the rest of the season the weather was so bad that they made but little more than a living. Under the same conditions I am afraid package bees would have starved to death before fall. Tulip will probably start blooming this year before the first of May.

The above is all I have to report which is based on known facts at this time, but I would like to do a little day dreaming.

Can package bees be secured from the south so as to arrive the first week in March? Will some package bee man advise me? Also, if they can be secured, can they travel safely if they arrive in a blizzard with temperatures ranging anywhere down to a possible zero F.? Zero is not likely at that time of the year but in 1932, I believe it was a fact, with drifts in the roads eight feet deep in places. Some roads were not open to the traffic for a week. This year the temperatures ranged mostly between 43 and 48 F. during the first seven days of March. Bees were probably flying each day and pollen from soft Maples started on March 3. On March 11 the temperature was 50 on the 13th, 63 on the 16th 83. This was most unusual, as was zero in 1932.

If the above is possible and combs plentifully supplied with pollen are on hand, package bees can be hived, judging by my experience, no matter what the outside temperature is. This can be accomplished in a darkened heated room, or at night. If the bees are gorged and the package placed in a hive with five combs the feed can and the queen cage can be removed and the queen cage hung to the top bar of the frame next to the package but a bee-space away, and two or three bunches of bees dumped on the queen cage—the scraper end of the hive tool can be used for this purpose —with hardly a bee flying. A moving screen should then be placed on the hive and the hive stacked and the room kept warm and dark until the bees have all left the cage and the queen released. The bees can be kept in this darkened warm room until the first warm day when they can be set outside. Or, if the weather keeps cold, I believe the bees can be set outside after they have established themselves on the combs if the moving is done very carefully.

If package bees can be secured to arrive six weeks, or more, ahead of apple blossom time and if they can travel safely in freezing weather I believe they can safely be hived and may successfully compete with overwintered colonies if drawn combs with pollen are available. The combs can be easily filled with sugar syrup with the use of a garden pressure sprayer. The comb is laid flat, quickly filled on one side with the spray, then reversed and the other side filled. The syrup on the under side will not run out. Sufficient syrup can be furnished at once in this way to last for quite a while and before the bees are hived.

In working out something like these day dreams of mine, it seems to me, is the only way package bees may be made to compete with overwintered colonies. To wait for certain outside sources of pollen and regular flying weather is too late. They must be had before overwintered colonies get too much lead on them in brood rearing.

Virginia.

—v—

GRAFTING WAX

Beekeepers who also do grafting and budding on fruit trees or nurserymen who have bees will find that propolis and dark wax from burr combs melted together in whatever proportion convenient makes a good, inexpensive grafting wax. It seems to have excellent adherence to freshly cut wood.

William A. Kyburz,
Columbia, S. A.

—v—

LET THE DOCTOR HELP

Before I was married I used to like honey but my parents never bought any. When my baby sister was born the doctor suggested that honey be used in the feeding formula. Mother used syrup instead.

Nevertheless the lesson is there. Enlist the help of doctors and dentists to make people honey conscious. The use of honey is dependent on publicity and every honey producer must subscribe to the effort.

Mrs. Joseph Werener,
British Columbia.

BEES KNOW THEIR GROCERIES

By WILBUR L. DuBOIS

IT sounds fantastic to say that bees spread their tables with beef and pork, whole wheat bread and butter, peas, beans and greens with sweets for dessert. It is a fact, however, that a well-nourished colony has all the elements of these common human foods in its daily diet.

The food we eat supplies the energy for our daily work and material for growth and repair of worn out parts. Our food also provides the vitamins and minerals which must be present if the body is to use the food effectively. To get all of these we must eat what nutritionists call, "an adequate diet"—meat, (if we can get it) vegetables, fruit and sugar.

Bees need the same nutritive elements we do but are not required to fill their market baskets with so many different foods in order to get them. Nectar and pollen provide the hive family with an adequate diet.

Beekeepers always have known that pollen is necessary for the growth and reproduction of a working colony but it has remained for a group of scientists to show how rich in nourishment pollen really is and just why it is an essential item on the menu of the hive.

After being deposited in the cells pollen undergoes a lactic acid fermentation converting it into "bee bread" which supplies the protein for making muscles, vital organs, glands, hair and wings. The protein also provides repair material for worn-out tissues.

Pollen is very rich in protein comparing favorably in this respect with beans, peas, and lentils. In actual percentage it exceeds that of beef, pork and lamb which have become of historic interest only to many of us during recent months. We might raid the bees' pantry to supplement our meager meat ration.

Even with an ample supply of sugar and protein, however, the growth of bees and the development and reproduction of the colony would not be possible without an adequate supply of minerals and vitamins, the spark plugs of metabolism. Fortunately pollen supplies the exact mineral and vitamins required by the bees.

In phosphorus and iron pollen is as rich as dried navy or kidney beans, peas and lentils while calcium and magnesium are more abundant than in any of these seeds. Copper is present in outstanding amounts. These and other mineral elements required for tissue and body fluids are brought in by the workers in their pollen baskets.

The vitamin content of pollen is impressive. Thiamin, the tonic vitamin is prominent among them. This vitamin is a scientific substitute for the sulphur and molasses, bitters and tonics we older people had to take in the spring when we were protesting children. Unlike these old household remedies, thiamin works. It stimulates all the body processes, is a corrective for certain diseases and a toner-up for well people. Bees in our hives never seem to need toning up. There are no cases of beri-beri and no evidence of even a milk deficiency of this vitamin. This is understandable when we learn that pollen is as rich in thiamin as raw beef and leg-o-lamb. Makes one a little jealous of the bees.

Niacin, the lack of which is associated with pellagra—the scourge of thousands of undernourished people in this country—is also plentiful in pollen. It is much higher than the amount found in dried beans and peas and approaches the quantity reported for fresh beef and liver. No pellagra among the bees.

In vitamin C, pollen is as rich as fresh endive, lettuce, rhubarb, canned sweet potatoes and steamed white potatoes, or canned tomatoes.

Riboflavin is another vitamin absolutely essential to us humans. Plenty of milk gives us all we need. Bees also seem to require this vitamin and although the milk man does not stop at the hive, pollen supplies its denizens with an ample amount of riboflavin. With the exception of yeast no product of plant origin shows so high a content of this vitamin.

When we were babies our mothers fed us cod liver oil for vitamin D to avoid rickets and enable our bones to grow straight and strong. Bees do not seem to have any deformities of the joints and this may be due to vitamin D developed in the fat of the pollen as it is exposed to sunlight in the field. In this study at the University of Minnesota pollen was found to have some anti-rachitic properties. The presence of Vitamin E, necessary for reproduction, also was demonstrated.

Pantothenic acid, a vitamin highly essential to human nutrition also appears necessary to the health of the bees. Bee-collected pollen is one of the richest sources of this vitamin. In this respect it is exceeded only by beef brains, cauliflower, Irish potatoes and tomatoes and compares very favorably with a number of muscle meats.

Judging from the militant activity of the bees when we disturb their homes there is no malnutrition among them. While nutritionists are struggling to determine what constitutes an adequate diet for the human body the bees gather nectar and pollen in proper amounts and eat the natural food provided for them. Perhaps we should take a lesson from the bees and follow Nature's rules also.

—V—

MIXING DRY MILK

I would like to offer a solution to the problem of chasing those playful little balls of dry milk all around the mixing bowl. Mix the sugar and water as is usually done and instead of adding the powdered milk to the liquid, add the liquid to the milk a little at a time to form a paste and keep adding syrup to thin it, finally adding all of the syrup, then add the soybean flour. Anyone fortunate enough to own a small electric drill can save a lot of hard work by taking a piece of 3/16 inch welding rod or heavy wire bending it into a triangle about 2½ inches on each side with one end straight for a shank about 6 inches long to use as a drill. You will be surprised at the mixing on a small scale that this little tool will do.

—Carl L. Stutsman,
Minnesota.

—V—

SWARM CONTROL

With an average of seventy-five colonies this is my fifth year without swarms. What is the secret?

A good strain of bees, young queens reared from colonies that do not start swarm cells, shade, ventilation at top and bottom, plenty of super combs early in the season and proper manipulation.

Manipulation consists in confining the queen to the lower story at the beginning of fruit bloom and later, before the brood nest becomes congested, removing all brood except one comb to the top of the hive and replacing it with drawn combs. Repeat in three weeks if necessary.

That's all. Results: no swarms, 200 pounds or more per colony in a good season.

E. S. Miller,
Indiana.

CAKES MADE WITH HONEY AT HIGH ALTITUDES

By EMMA J. THIESSEN,
University of Wyoming Agricultural Experiment Station

WITH the rationing of sugar, investigators in experimental kitchens and laboratories throughout the United States quickly came to the aid of the housewife by devising many excellent formulas for utilizing honey in cakes, cookies and various desserts. Such recipes are available in household magazines, also in circulars published by experiment stations, the American Honey Institute and other agencies.

Unfortunately for the homemaker in mountainous regions, where the atmospheric pressure is considerably lower, cakes made from low altitude recipes may fall or become dry, coarse and gummy in texture. At the request of the homemakers in these areas, home economists in the research laboratory at the University of Wyoming, which is located at an elevation of 7,200 feet, have formulated high altitude honey recipes for five types of cakes.

Honey cooky recipes for high elevations were published in a previous issue of the American Bee Journal, (May, 1943).

Both cookies and cakes containing honey remain moist over a longer time in these semi-arid high-altitude regions than those made with sugar, due to its hygroscopic character. The addition of honey aided in keeping fruit cakes moist over a period of several weeks. It imparted a delicate and pleasing flavor to applesauce cake and blended particularly well with chocolate in cakes.

Baking adjustments with honey, as with sugar, presents one of the big problems in altitude cookery since it is necessary to change the proportions of certain ingredients to be sure of success. Although all cakes containing shortening are made of the basic ingredients; namely, sugar, liquid, eggs, flour, fat and leavening, the proportions of these may vary with different cakes. This accounts for the large number of butter cake recipes, as formulas must be balanced, and if one ingredient is changed other modifications must be made which further complicates altitude changes in recipes. Therefore, no one general rule can be used for the successful modification of all cake formulas for high elevations. It is simpler for the homemaker to follow recipes already adjusted for high altitudes, rather than attempting to make her own modifications, unless she enjoys experimenting.

Some of the general changes from sea-level formulas are a decrease in the amount of leavening. The amount of baking powder needed is usually slightly less than one teaspoon for a cup of flour for plain standard cakes. Usually smaller amounts of sugar or honey are used at high elevations, and for richer cakes, the fat must also be reduced. Flour exposed to the semi-arid atmosphere in high-altitude areas dries out rapidly; hence more liquid or less flour may be needed in the recipe to obtain a batter of the proper consistency.

It was evident from experimental baking tests in the home economics research laboratory that honey could best be incorporated by beating a small portion at a time into the fat. If mechanical mixers are not available, hard beating with a spoon will give a good emulsion. To hold the emulsion, a small amount of flour is added before the eggs or the liquid. Soggy layers form sometimes in cakes where a large proportion of honey has been used. This can be prevented by mixing as described. Honey was most pleasing in a partial substitution for one-half to three-fourths of the sugar.

The five types of honey cakes given below were pronounced very pleasing in flavor and good in texture by home economists who judged the products.

HONEY CAKES FOR HIGH ALTITUDES

Honey Chocolate Cake with Sour Milk

½ cup sugar.
½ cup fat
½ cup medium thick honey
2 eggs
6 tablespoons sour milk
1½ cups cake flour
¾ teaspoon soda
½ cup cocoa
½ cup boiling water
1 teaspoon vanilla

Cream butter and sugar, add honey a little at a time and beat in thoroughly. Sift flour once before measuring, then sift flour, cocoa, soda and salt together three times. Add two tablespoons of the dry ingredients to the creamed mixture. Then add the egg yolk one at a time. The remaining dry ingredients and the liquid are added alternately to the creamed mixture, beating well. Fold in beaten egg whites. Bake in a sheet pan (11 in. x 7 in. x 1¼ in.) at 335°F. for about 35-45 minutes or until done. Cool 115 minutes before removing from the pan. This cake may be baked in a loaf.

Plain Standard Cake with Honey

½ cup medium thick honey
2 tablespoons sugar
4 tablespoons fat
2 eggs
6 tablespoons milk
¼ teaspoon salt
1 teaspoon baking powder
1¼ cups cake flour
(measure after sifting once)
1 teaspoon lemon flavoring

Cream the butter. Add sugar gradually while creaming. Beat in honey, a small portion at a time, until light and fluffy. Beat in about two tablespoons of the flour, then the egg yolks one at a time. Sift flour, baking powder and salt. Add about 3 tablespoons of sifted dry ingredients to the creamed mixture, beat well, then add the milk alternately with the remainder, beating well after each addition. Lastly, fold in the beaten egg whites. Bake in a sheet pan (11 in. x 7 in. x 1¼ in.) which has been lined with greased waxed paper. Bake at 350°F. about 35 minutes or until done. Let cake stand in pan 15 minutes before removing. This cake may also be baked in a loaf.

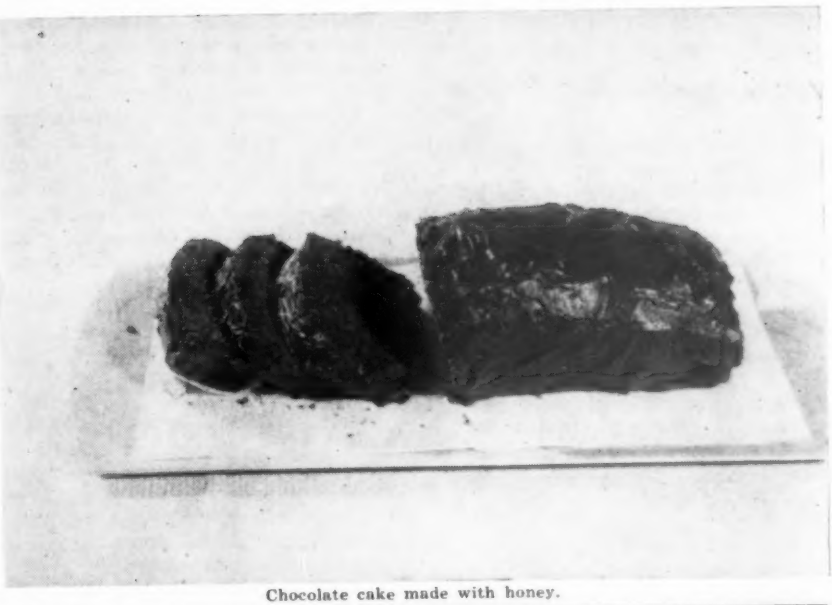
Spice Cake with Honey

½ cup sugar
½ cup fat
½ cup medium thick honey
2 eggs
½ cup milk
1¾ cups cake flour
1¼ teaspoon baking powder
½ teaspoon salt
1 teaspoon nutmeg
2 teaspoons cinnamon

Cream shortening and sugar. Add to this the honey a little at a time, beat well after each addition. Continue until all is blended. Sift flour, salt, baking powder and spices together; add 2 tablespoons of the sifted dry ingredients to the first mixture. Beat in egg yolks. Add the remainder of the dry ingredients alternately with the milk. Fold in the stiffly beaten egg whites. Bake in a sheet pan or in two 8-inch greased layer tins at 375°F. for 15-20 minutes or until done. Cake is best with quite thick layers.

Honey Apple Sauce Cake

½ cup honey
½ cup sugar
6 tablespoons fat
2 eggs



Chocolate cake made with honey.

Standard cake, w to noh y.

Honey applesauce cake.

2 cups flour
½ teaspoon salt
½ teaspoon soda
1 teaspoon cinnamon
¼ teaspoon cloves
1 cup thick unsweetened applesauce.
2/3 cup chopped nuts
½ cup chopped raisins

Cream fat thoroughly, add the sugar gradually. Then beat in honey a small portion at a time until fluffy. Mix in the egg yolks. Sift the other dry ingredients twice and add alternately with applesauce to the creamed mixture. Add nuts and raisins. Fold in egg whites. Line bottom of pan with waxed paper. Grease paper lightly. Bake preferably in two loaf pans (9 in. x 4 in.) at 350°F. for one hour. If all purpose flour is used, take out 2 level tablespoons from each cupful of flour.

Dark Honey Fruit Cake

½ cup honey
¼ cup sugar
6 tablespoons hydrogenated fat
2 eggs
2¼ cup cake flour
½ teaspoon baking powder
½ teaspoon soda
1 cup thick applesauce (unsweetened)
1 teaspoon allspice
1 teaspoon cloves
1 teaspoon cinnamon
1 teaspoon salt
1½ cup cooked raisins, chopped
1 cup chopped nuts
1 cup diced glazed fruit

Cream fat thoroughly. Add the sugar while creaming. Beat in honey gradually, and until light and fluffy. Mix in egg yolks. Sift the other dry ingredients twice and add about two tablespoons of this to the above creamed mixture. Applesauce should be of a thick consistency which will drop rather than pour from the spoon. Mix fruits, nuts, and well drained raisins. Add to batter. Lastly fold in stiffly beaten egg whites. Bake in two loaf pans about 9 in. x 4 in. Use lightly greased wax paper in bottom of pans but do not grease sides. Bake at 350° F. for one hour. Cool 15 minutes before removing from pans. May be stored several weeks in a tight tin container.

—V—

HONEY SALES

I have bought "Old Favorite Honey Recipes" and other recipe books of small size that fit in the cover of a five pound honey can and in my seven years of selling honey I have always succeeded in pleasing customers. I have only had one pail honey to take back that a farmer bought and left the cover off so ants got in.

People are pleased with recipe books. Many of my customers use them and several have also copied from the Bee Journal.

August H. Zahn, Iowa.

—V—

HOLD YOUR BONDS

The Answer

THE following questions and answers are taken at random from among the best replies in previous months in an attempt to use material which is long over due. We expect to propose a new question just as soon as we are able to catch up on the past replies.

How Can You Improve the Morale of a Colony?

This is a toughey when you consider no two beekeepers or authorities can agree on what colony morale is. Anyone who keeps bees long realizes that every colony has definite characteristics distinguishing it from other colonies. It may be the queen—her parents, her egg laying, her reaction to stimuli, and the attitude of the bees towards her. It may be the workers—docile or vicious, industrious or lazy, inclined to swarm, or refusing to, attempting to supersede without reason, or retaining a queen even though poor for a long time; bees that are resistant or non-resistant, good housekeepers or poor, and so on. It may be the drones — who knows? It may be weather, type and length of flow, strain of bees, it may be even the beekeeper so that the question is difficult to answer and complicated by all these problems.

Ed Braun, Manitoba, Can.

— V —

A colony without morale is like a balky horse or like a person confronted with a hopeless job without the spirit to complete it. A good example of a colony of low morale would be one that is queenless and no eggs to produce another queen or a colony with combs so full of honey and brood that the queen has no room to lay and the bees no room to store. Or a colony that has been severely poisoned or has its combs full of disease.

Examples of improving morale might be covered by the following manipulations:

1. Checking colonies frequently to see if they have a queen by looking for eggs every ten to twelve days in the height of the brood rearing season.

2. Checking the brood chambers at the same time to see that the queen is not crowded for space, providing more room when necessary, keeping a clear brood area constantly.

3. Checking supers frequently to provide enough room in advance of need, an item often overlooked.

4. Checking ventilation. Colonies without shade or with too much or with too small entrances hived without shade become unbearable. Insulating the covers, or raising the outer covers slightly or pushing supers back and forth on each other, or using block of wood at the corners of the hives all help.

5. Raising the hives from the ground if ants are troublesome or skunks are common to prevent disturbance.

6. Removing poor combs and providing good ones.

The experienced beekeeper by walking down a row of hives when bees are flying often can note colonies requiring attention by the way they enter and leave the entrance. A new swarm of bees is the finest example of the colony with the highest morale and the beekeeper should strive to have all colonies working with the same enthusiasm.

R. E. Newell, Mass.

— V —

How Do You Deal With a Really Vicious Colony of Bees?

The vicious colony should be requeened but there are times when such a colony must be handled. The most vicious colony becomes gentle when demoralized. A bear makes use of this principle when raiding a bear tree or a colony of bees.

If the whole hive can be lifted from its location, move it about ten feet after a generous smoking. Then set the top super back on the old place upon the rim of the cover so that the field bees have a place to return. Then separate the colonies, putting each super or hive body a few feet apart. When only the brood chamber remains, smoke the bees generously and separate the combs calmly as in a regular examination.

If the colony is satisfactory, except for its temper, try to find and destroy the queen. Place a gentle colony in the position formerly occupied by the vicious one. Smoke them lightly, then put the supers on this colony. Put a sheet of newspaper with a few small holes for ventilation above the supers and set a queen excluder over the paper and put the brood chamber of the vicious colony on top. Examine it after a few days for queen cells and destroy them. Then set it off on a separate stand for increase and requeen it.

If there is no honey flow, it is well to cover each super with an inner cover, paper or wet burlap to prevent robbing during the process. Sprinkling the combs with thin sugar syrup or even with water will help colonies that are exceptionally cross.

This method works with me without too much stinging, although I usually wear a veil, and tuck my trouser legs inside my stockings. If the apiary is in a city location it is a good plan to move the colony to a safe place in an out apiary before trying this treatment.

R. E. Newell, Mass.

— V —

Swarm Control

Poor combs, crowding, failing queens may cause swarming. Keep the queens to a high standard. Requeen any colony that shows signs of failure. Allow no drones with poor combs. Provide adequate room.

With section honey, under crowded conditions I take combs of sealed brood out of the brood nest and replace them with dark empty worker combs, placing the brood in a hive body on top of the supers and above an inner cover, allowing young bees flight when they emerge. When the young bees are old enough for the field and flying well let the bees down into the supers through easily opened passage-ways which can be kept closed with blocks until needed. Keep all queen cells destroyed in the brood on top.

Examine the brood nest at reasonable intervals and should the queen be crowded exchange sealed brood for empty combs from the top. Occasionally colonies will block brood combs with pollen or honey. I replace them with full frames of foundation as long as swarming is possible. I look into the brood nest every seven to nine days and check the supering as needed, usually keeping the unsealed honey next to the brood nest.

W. Frank, Iowa.

— V —

Crowding is perhaps the chief reason for swarming, particularly when you have good stock and young queens. The main thing is to prevent crowding. In settled warm weather take straight light colored combs, free from drone cells, and put them alternately between the combs of the brood nest. If you have ten combs of brood and ten light colored combs you will end up with two bodies. The bees will not store honey in the light combs as quickly as they will in dark ones so the queen has time to start laying eggs in them.

Use plenty of super room, plenty of ventilation, keep combs in the brood nest spaced closely to prevent storage of honey in them and use nine combs in the supers to allow ready storage.

It sometimes helps to raise the

(Please turn to page 282)

EDITORIAL

HOW MANY SUPERS?

NOT many beekeepers have enough supers to contain a maximum crop without stopping to remove some honey in the midst of the honeyflow. Dr. C. C. Miller wrote much about an ample supply of supers. He advocated having enough to hold the biggest crop ever harvested in the beekeeper's particular locality. After a record breaking harvest in 1916 he stated that, for his neighborhood, this would be seven supers for each colony to take care of his biggest crop.

Such advice cannot be taken too literally however as these big crops come only at intervals and in the years between many supers would have to be stored without use, compelling repeated fumigations and constant protection against damage. Most commercial men strike an average and equip enough supers to hold the best average crop, preferring to rotate (extract and return supers) in the big years.

The average beekeeper however usually fails to have enough supers even by this measure. He also frequently fails to give supers in time to get a full crop. More honey is lost from this faulty manipulation than from most other causes. A good supply of equipment is not only a good investment but it is also insurance against a loss of part of the crop.

—v—

THE HONEY MARKET

THE acute sugar shortage is making an unusual demand for honey and the public is becoming honey conscious as never before. Much of the future prosperity of the beekeeping industry depends upon reaching the average housewife with a supply of good quality honey. If this crop goes into market to supply the candy or soft drink trade it will build little good will and only be replaced by cheaper sweets when they are again available. If it goes into the homes for use on the tables many new customers will acquire a taste for honey which must be supplied permanently. It is highly desirable that packers who are in position to reach this trade have an ample supply of the best honey.

—v—

PLANT COMPETITION

COMPETITION among plants for the visits of bees complicates the pollination problem for those who must depend upon the honeybees for this service. With plots of many different plants in our honey plant garden we are learning something about which plants are most attractive to the bees under our environmental conditions.

A vast amount of observation will be necessary before we can chart the list of plants which compete with each important cultural group. Such observations are of use to very limited areas since the behavior is so different under other conditions.

There are a number of plants which cause the bees to desert the clovers when sufficient flowers are available. Plants of the mint family are near the top of the list in bee attraction. We have often made mention of the way in which the bees are attracted to anise-hyssop in all kinds of weather. The same holds true of Nepeta macrantha, Salvia superba and some others. If these plants were widely naturalized, it would make a decided difference in the number of bees visiting the clovers during their period of bloom.

Now that seed growers and agronomists are at last becoming conscious of the extent of their dependence upon bees for pollination it should be possible to secure support for extensive research in this field. We know that some varieties of tree fruits compete with others for honeybee visits and likewise other economic plants face similar competition. Until we know more about this competition we are in the dark as to the number of colonies of bees necessary to secure best results and our management must be governed in accordance with facts still to be learned.

—v—

KEEP COLONIES STRONG

THE year 1945 has given a great demonstration of the old formula for success; "Keep Your Colonies Strong." Spring opened early and brood rearing expanded rapidly with every prospect for strong colonies for the harvest. Then came the long period of cold and wet weather when so many bees ran short of stores. Brood rearing was curtailed for lack of supplies and colony population declined when it should have been reaching its peak.

Some beekeepers postponed feeding in the hope that more favorable weather would bring ample nectar and pollen from the field. In some cases sugar for feeding was not available and starvation was the result.

When the finest honeyflow in several years finally started strong colonies were the exception instead of the rule. In most any Midwest apiary one can see an occasional strong colony with 300 or more pounds of honey in the supers along side others with little or no surplus.

Beekeepers generally are resolving never again to get caught short of reserves when they see how much honey they have sacrificed for lack of a few pounds of reserve in each hive at a critical time. Not in thirty years has there been a time when ample reserves paid such dividends as is the case in this year of 1945.

At the American Bee Journal honey plant garden, the hives on scales weighed 100 pounds at the end of May. On July 6, it weighed 450 pounds. Never had this colony lacked stores. Near by is a hive that has produced no surplus because the bees had too little reserve in April and May and brood was curtailed. Certainly a lesson worth remembering.

—v—

POISONING OF BEES

A Michigan reader reports the serious loss of bees through poisoning. 100 colonies were ruined or killed outright. He ascribed the loss to the long blooming season which made it difficult to spray without killing the bees.

Such reports are coming to us with increasing frequency and in many cases the beekeepers have been compelled to move their bees away from orchard districts. Since the fruit grower must depend upon the bees for pollination it becomes increasingly important to find some means of control of orchard pests without killing the bees.

Many repellents have been tried in the hope of finding something which might repel the bees without loss of efficiency in the destruction of insect pests. The problem is not easy of solution, but a remedy must be found if honeybees are to remain the chief pollinating agency in the orchard districts.

How to Do It

PROCESSING WAX

Here is a method satisfactory for rendering small quantities of wax. Place the wax cappings, burr combs, or what have you, in a large kettle with a few inches of water. Boil about 15 minutes stirring occasionally. Be careful the mixture does not boil over or a bad fire may result.

Have another container large enough to hold the wax and water from the first one; a piece of thin cloth (I use thin salt sacks or similar material) and a wire strainer. Place the cloth in the strainer over the second container and pour the wax and water into it. Use a clean cloth each time. Most of the wax remaining in the slumgum can be pressed out with a spoon against the strainer.

Allow to cool slowly till set, then lift off cake of wax. Of course if you have many hives this method is not practical but it is fine for small quantities. I find it is better than putting the wax in a weighted bag in a boiler of water. I seem to have difficulty in getting the wax to rise in this way. I find a good idea for saving wax is to have a container handy when cleaning equipment to hold small pieces scraped off frames, etc.

J. W. Kent, Saskatchewan.

—V—

HOW TO HIVE THAT SWARM OF BEES, UP THERE!

First: Get a new hive ready. We like one comb of small larvae, the balance empty combs. Set this hive under the swarm.

Second: Go to a good colony, take out three or four combs of brood leaving on them as many bees as possible without queen. Set these beside the new hive.

Third: Now if you have some one that likes to climb, that's fine. Tying a rope to a piece of tire chain or some tool out of the automobile and throwing this over the swarm, makes a nice way to shake. Jolt them suddenly enough so that some of the bees fall down around the hive. Now quickly shake those brood frames in front of the hive and as the bees crawl in, they will start fanning and roaring, calling the swarm right in with them. Just keep shaking and smoking the old clustering place so the bees can not cluster again. Directly they will all come to the hive. Now replace those brood frames where you got them, without the bees of course and you are all done. Next trip the swarm will be ready for an armful of supers—we hope.

Clyde Wheeler, Ohio.

—V—

INNER TUBE FOR SMOKER

A discarded thin inner tube is a good substitute for worn out leather on the smoker. It works.

H. G. Kull, Missouri.

—V—

TO KEEP DOWN GRASS AND WEEDS

I find heavy paper boxes excellent. I watch the dry goods stores for surplus empty boxes, rip them open, press them flat on the ground before weeds and grass start in spring. I have no further bother through the season. Insert one end under the entrance boards and place a spade of dirt on the outer corner and the job is done. These pasteboards also do well as shade boards when well weighted on top of hive.

J. H. Sturdevant,
Nebraska.

—V—

TO DETERMINE STRENGTH OF FORCE

Here is an easy way to determine the strength of the field force of a hive during a honeyflow. When a bright sky is suddenly darkened by a scud of threatening shower the full force will immediately come home from the fields and can be seen pouring into the hive in a great rush to get inside before the downpour.

W. Leon Rogers,
Massachusetts.

—V—

KEEPING THE SMOKER CLEAN

It is important to keep the smoker clean in the busy season when it is in daily use. There is a heavy accumulation deposited inside both the stove and snout. Hot smoke punishes the bee unnecessarily. A good way to keep the smoker clean is to cork up the lower entrance, fill up the fire chamber with water to soften the carbon coating, then the coating readily and easily is scraped out with a hive tool. Also an occasional flushing of the fire box when it is cool tends to prevent the same hard formation.

W. P. Kinard, Mississippi.

—V—

STOCK SALT FOR GRASS

Every try using stock salt to spread around hives to keep grass from growing? It works.

H. G. Kull, Missouri.

THE ANSWER

(Continued from page 280)

brood chamber and place the super with dark combs under it which allows the bees space so they will not crowd so badly in the brood chamber where the queen is laying. As the young bees emerge their cells will be filled with honey and the queen will move down from above.

Frank Hilderbrand,
Oklahoma.

—V—

Here the swarming period occurs about the 15th of May. I find swarming pretty well controlled by putting on a deep super of drawn combs or honey in fruit bloom about April 1 and about the 20th reversing the two, repeating this twice or more at ten day intervals.

After the final reversal I put on an additional super then further supers when they are needed. I winter my colonies in double brood chambers with an upper entrance.

The secret of swarm control seems to be (1) give the bees plenty of room; (2) separate the old bees from the young which is done by reversal; (3) provide shade and ventilation and an upper entrance, a double brood chamber, and plenty of super room at the right time.

Earl Miller, Kentucky.

—V—

I winter my bees three stories high. At the beginning of fruit bloom I put the bottom story on top, about May 10th. At the start of clover flow again take the brood chamber from the bottom and put it on top. A week later or as soon as the top story is full of loose honey, put an empty super under it, between the second and top hive body (of course I mean full depth hive bodies). If the top story contains some eggs, take two combs from it and place in an empty super in exchange. This prevents bees from building cells in the top body. I do not use excluders.

If the colony is superseding put a queen excluder on the bottom board and give a small top entrance. This keeps all the bees home and good laying queen is the result.

Vettie Van Allen,
Michigan.

—V—

I use a large comb of brood from a healthy colony, tied on the end of our long handled apple picker. Place an open hive partially filled with drawn comb under the tree. Hold up the pole with the brood comb against the swarm. Bees start moving onto it almost at once. In a short time carefully move the end of the pole down into the top of the open hive.

Cut the string that holds the comb to the pole, slip the comb of bees quietly into the center of the hive. The bees will spread out over the remaining frames, perfectly contented.

We now have two long poles with sockets so they can be united, and we made an open framework large enough to hold a large comb of brood which can be fastened to the pole and we are ready for an emergency of this kind. It is a very successful way to get a swarm from a high tree.

Mrs. Warren R. Rudy,
Ohio.

— V —

Swarms in the tops of high trees are difficult (particularly if poison ivy covers the trunk for several feet) It often looks hopeless. A good stout pole however, run through a strong cardboard box near one side with a cleat nailed against it from outside for support helps solve the trouble. If swarm cannot be reached from the ground a ladder is placed against the limbs underneath and tied firmly at the top to prevent slipping. Then put a hive on the ground close to the foot of ladder with old combs or frames of foundation with at least one comb of eggs, larvae and honey from a colony for attracting the bees and to prevent absconding. A few bees taken with this comb does no harm and will often help. Leave the cover of the hive off.

When everything is ready, trouser legs tied, veil on good, mount the ladder with the long pole, push the box up under the swarm with an upward motion to dislodge the swarm into the box. Slowly lower the pole to an easier position, come down the ladder slowly, dump the bees into the open hive and as they enter put on the inner cover and the outer cover. If you are lucky you may have the queen with the first trial, if not and the bees cluster back on the tree, repeat the job. The comb of honey and bees attracts a large part of the bees that have been dumped into the hive and the next load will be smaller. If most of the bees remain and those that fall on the ground enter readily the hiving has been successful. If any large number go back to the tree these should be brought down also. A solution of sugar and water sprinkled into the box often helps and some may be sprinkled on the bees.

R. E. Newell, Massachusetts.

— V —

How Do You Introduce Queens?

I think for best success the nucleus method is to be preferred, even though other methods are sometimes successful and may be quicker. The nucleus method also allows the queen to be tested before she is actually used to replace another. When she has proved herself she can be used.

These made-up requeening nuclei are placed over inner covers on colonies with screened escape holes until needed.

They may be united with the colonies below by removing the inner cover and inserting a thickness of newspaper between the nucleus and the colony. There is no interruption of brood rearing, the colony receives no shock.

Nuclei are easily made up in late afternoon. Take a frame or so of brood, honey and bees from colonies that can spare them, place in super on colony above a special inner cover having the escape hole screened, also a hole lined on both sides of the excluder zinc and slide to prevent passage of bees for the first week. Also with an entrance in the rim of the cover.

I often grow queens thus in spring by using ripe queen cells in nuclei over these inner covers leaving the slide over the excluder strips open so the bees from below can pass into the queen nursery above. An extra comb should be given on each side of the cell comb. Strong colonies may populate several of these queen growing nuclei.

Their use after the queen has mated and has been tested is the same as those formed by introducing queens.

W. P. Kinard,
Mississippi.

American Honey Institute

Commercial State Bank Building, Madison 3, Wisconsin

The leaflet, "Use Honey in Canning and Preserving," has been revised and is being widely distributed.

Another leaflet, "Use Honey in Jellies and Marmalades," with directions for adjustments for various altitudes is ready for you. The recipes in this leaflet were developed in the Home Economics Research Laboratory, University of Wyoming, under the direction of Miss Thiessen.

Send sixty cents for 100 of these leaflets to the American Honey Institute, Madison 3, Wisconsin.

— V —

A bulletin, "Home Canning of Fruits and Vegetables," has recently been distributed by the U. S. Department of Agriculture. In it we find: "Use honey, if you wish, to replace as much as half the sugar called for in canning."

— V —

It is a keen disappointment to the Director of the Institute that she cannot attend the many beekeepers' meetings to which she has been invited.

— V —

Now is the time to analyze your product. If your honey is on the store shelf, step in and see whether at first glance your honey and the container stand out as superior. Purchase several brands of honey, take them home, analyze them. How does your package rate? Can it be improved?

— V —

A letter from Australia states that the honey producers of that country very much admire the work of the American Honey Institute and hope to form an organization on the same pattern.

— V —

Extracts from letters:

"We have found your book "Old Favorite Honey Recipes" very valuable in our home service work. For that reason we should like to have a book for each members of our department." —Ohio.

"May I have a copy of "Old Favorite Honey Recipes." A Home Economist read a recipe for cookies out of your book to me over the telephone today. I made them and we are delighted with them."—Washington, D. C.

— V —

The Director will broadcast on honey over WGN Chicago in October —over WHA-WLBL in August and September.

Grafting queen cells (From John C. Hogg, Georgia)

The Production of Queen Bees

PRODUCING QUEEN CELLS-EQUIPMENT FOR THE SMALL PRODUCER

By E. C. Bessonet

THE conventional use of the swarm box to start queen cells and the use of brood in a hive body over a queenright colony as a cell finisher has good features. A powerful swarm box with combs of pollen and honey will start a lot of cells. If it were always possible to get the finishing colony to complete the job the entire process would be satisfactory, but, under certain conditions, this is not the case. The finishing colony has a queen and the brood over the excluder gives them only a partial urge to produce queens there. Secondly these queen cells need pollen and bees will not move much pollen above the excluder for it is more convenient to store it in the brood chamber below. Third it is hard to maintain a large force of bees above the excluder unless the colony is very populous. There is not the incentive for bees to work the cells above the excluder except that they are somewhat inclined to feed queen cells anywhere if there is brood and no queen in evidence. If a top feeder is used with this type of finishing colony and pollen is fed to it better results are obtained. Those who are successful with this method must provide the bees and the feed to stimulate them.

I come to the conclusion that cells should be near the entrance where pollen and nectar are available and where bees have easy access to the cells for feeding. I started to use a standard hive body with as many bees as it will hold and on the side of this colony, which is queenless, is set another colony to support the queenless one which is the one used both to start and to finish the cells. Some sealed brood is kept constantly in the queenless starting colony and only seven combs are used since three grafting frames will be in the hive at all times. About three combs of sealed brood should be kept in the hive and when more brood is needed it is taken from the supporting colony. The three combs of brood alone however will not maintain enough strength constantly so a good package of bees must be added from time to time.

This starter-finishing colony will work fifteen to twenty cells at a time and a fresh frame of cells can be given every four days since the previous batch will then have been sealed.

Some type of feeder is necessary and it may be an entrance, an inner, or a top mason jar type. The top jar type is more effective than the entrance type as the bees are able to remove the food even in cold weather. The inner board feeder is good but its objection is too rapid feeding with a subsequent stoppage which causes idleness. The top jar with three small holes provides a constant feed for a day and by refilling, the bees are kept busy.

Pollen should be watched. Any shortage will cause trouble. If bees have none in the fields, keep a close check on combs, as large quantities are used. In areas where a long dearth is common, pollen trapping is recommended, to give pollen to be fed back when needed.

Virgin queens from the queen yard often enter cell building hives so an excluder strip over the entrance to keep them out will save many valuable cells. Of course the combs must be examined every time a frame of cells is put in and any queen cells started by the bees must be destroyed. Any virgins that emerge from this source will cut down most of the grafted cells.

If you have plenty of bees in this hive of all ages and provide pollen and feed when needed, good queen cells can be developed.

I sometimes use a good colony with two hive bodies for raising queens, putting as much of the unsealed brood as possible above a moving screen with about three combs of bees, enough to keep the brood warm. In the lower brood chamber a space is left for a grafting frame. After the hive has been prepared, about three to four hours are necessary to get the bees to realize that they are queenless below and in the mood to accept queen cells. If the brood chamber is full of bees and enough pollen is stored in the combs this colony will accept thirty to forty cells. Of course a division feeder is used to start the cells. The cells can be left in the hive two days, then transferred to a colony such as previously described without a queen, in a single hive. The queen over the screen can then be put back in the lower body and left four or five days and then the operation may be repeated.

This method is better than the swarm box as the cells have already been fed two or three days and need no additional feeding. If however

the cells are finished in the single queenless colony the bees feed these cells with greater enthusiasm and with better results.

Sometimes the beekeeper wants to produce cells without grafting and with the least work. The best plan is to dequeen the colony that is to be used as the breeder. If half a sheet of foundation is put in this colony sometime previously so that the queen may have eggs and larvae in all stages in new comb the chances are that the bees will start cells on this delicate comb.

Cells will be started with this plan over several days' time in keeping with the natural instincts of the bees. It is hard of course then to ascertain the age of the cells and the best that can be done is select cells about ten days after the first ones were started, and cut these cells out with a piece of comb and insert them carefully in a nucleus hive or in a hive for increase.

This is not ideal but queens may be obtained in this way when the operator is busy with other things. When conditions are favorable the cells will be satisfactory.

Nucleus Equipment for the Small Producer

For those who raise a small number of queens a large nucleus is easy to operate and takes care of itself better than a small one. Since the operator is not interested in high production per nucleus the queen may lay over a longer time.

In commercial production however, the main objective is to get the queen laying and to sell her soon so another may be produced and therefore commercial breeders are not able to handle large type nuclei economically.

A standard hive body may be divided into two or three compartments with division boards and inner covers to fit each allowing the use of standard frames. Shallow extracting supers divided in like fashion also give good results.

With special frames, either shallow or deep, equipment may be divided into four compartments but this gives a smaller working force and feeders must be used to insure success.

Unless queens are produced in a honeyflow feeders are indispensable since it puts the bees in the right mood to accept both cells and virgins.

The length of time the nucleus will be operated must be considered in the type of equipment to use. If one or more combs of honey are used these will be consumed if the nuclei are operated over a long time with no flow. The operator will have to decide what to do from the nature of his honeyflow and the length of time the nuclei will be in use. It is well to remember that a large force of bees is harder to get under control than a small one which results sometimes in more lost cells and balled virgins. Since behavior is a difficult problem with a large force of bees methods differ.

After stocking large nuclei more time is required to get the bees in the right mood before they are ready for cells. Feeding will help them. When the queen is removed if there is no flow and no feed they may destroy any additional cells given to them. Sometimes they wait until the virgins emerge and then ball them.

Queens must lay three to five days at least in a large nucleus so the population may be maintained. If this is not done the bees will dwindle and moths often destroy combs. Robbing is more serious too when nuclei are weak and without enough force for protection.

The best way to stock large nuclei is to close the entrances and take them to an out yard for stocking. There one comb of sealed brood and two or more combs of honey and bees are given. After they are placed in their location they should be kept in confinement a day before they are released. Should the weather be hot they will have to be put in a cool place during confinement.

After the bees are settled and flying, cells may be put in. If there is no flow feeding will be necessary. If the flow is in prospect and conditions are not favorable when the cells are put in, spraying the bees with syrup will help, if there is no feeder available. The nucleus should not be disturbed for ten days when the queens will probably be laying. Always handle a nucleus carefully and use as little smoke as possible.

If several hundred queens are needed every year it pays to make special individual nuclei. Nuclei with three shallow frames and a feeder are good. One with three deep combs and a feeder will serve although it is more expensive. Individual nuclei are easier to handle and there is no disturbance of other compartments when they are being worked which is one of the troubles with the divided nucleus.

Larger nuclei maintain themselves with less trouble but the queens in them must be permitted to lay longer. Commercial producers who must remove queens as fast as possible should consider the size of the nucleus on the basis of the short laying period.

— V —

FALL REQUEENING WITHOUT DEQUEENING

By Alexander James

EACH fall I requeen all my colonies, with the exception of those that have produced above average. It has been my observation that a queen is at the height of the egg-laying capacity during the first year. Although she may appear to give satisfactory service for several years, her ability to lay is steadily diminishing. This causes a tendency among the bees toward supersedure, swarming, and the raising of excessive numbers of drones.

I begin my requeening program immediately after the last major fall flow and before the bees (withdrawing into the brood nest for the winter) stop work in the supers. At this time the queen, worn out by her strenuous labor of the spring and fall, is at a low ebb in her egg-laying activity, anticipating the suspension of brood rearing for the year within a few weeks.

Selecting combs containing eggs and young larvae from my best colonies (those that I have noted during the season for their productability, gentleness, color and other desirable traits), I distribute them with adhering bees in the supers of the colonies to be requeened, well above the brood nest. The nurse bees of the isolated brood, finding themselves queenless, immediately build royal cells.

Within a week after emergence the young queen will have descended into the brood nest, disposed of the old queen, and become mated. Then, glorying in her new found power of fertility, she will quickly expand the brood nest and rapidly repopulate the hive with her own progeny.

Thus, in one operation, the beekeeper has provided young vigorous queens to head his colonies the following year and filled his hives with young bees, thereby insuring their survival through the winter. He also has saved himself the tedious job of looking for evasive queens to be replaced in over-crowded hives and the expense of buying them from the south. Incidentally, for those that have vicious colonies and wish to requeen them with gentler stock, what method could be easier?

— V —

HUMMING BIRD KILLED BY BEES

An interesting thing happened in one of my neighbor's apiaries. We had three days of rain and cool weather and the bees did not come out. However the neighbor noticed one colony where the bees were very active. He found a handful of bees on the front board covering a humming bird which as we think unable to find other nectar tried to get in the entrance of the hive. I wonder if others have heard of a similar happening to birds.

Frank Wall,
Missouri.

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Meetings and Events

Bronx County, (N. Y.) August 12

A special meeting of the Bronx County Association, with a picnic and corn-roast, will be held at the home of the president, 3661 Eden Terrace, (Elenwald Apiaries) August 12th, 1:00 P. M. All interested in beekeeping will find a warm welcome. Bring a basket lunch.

Any visitor attending and becoming an active member will be presented with an electric wax embedder free. The annual dues are $1.50. The embedder alone is worth the price of many years dues.

We want a large attendance of really enthusiastic beekeepers. Bring your question and problems. Cordially yours,

Harry Newman, Sec'y.

— V —

Arkansas

Arkansas beekeepers are coming in out of the thicket. In early 1944 the Arkansas Beekeepers Association was organized with Homer Richard, El Dorado, as president; Vaughn Wilson of Bethesda, vice-president; Irvin Nantze, North Little Rock, secretary-treasurer; Ray Fischer of North Little Rock and W. W. Dobbs as the other members of the executive committee. Through the passing months members were added and on November 27th of 1944 the Association met in a state wide meeting at Little Rock and re-elected officers changing to J. E. Gooch of Pine Bluff as the vice-president.

Plans were made for needed legislation. Ray L. McLester, of Wheatley, J. V. Ormond, of Elba, and V. L. Arnold, of Newark, began activities toward this end making draft of desired legislation and providing each member of the State General Assembly with information. The outcome was a bill amending existing laws so that an apiary board of three beekeepers recommended by the Arkansas beekeepers, appointed by the Governor has administrative responsibility of apiary laws.

An appropriation was obtained of $8,200 for the first year and $7,500 for the second year of the biennium. Ray L. McLester of Wheatley was appointed for the four year term, V. L. Arnold for three years and J. E. Gooch for the two year term.

The Board met June 15th and established an office in the State Capitol electing A. Gay as State Inspector and four deputies including S. J. Head of Hamburg; J. E. Gooch, Pine Bluff, Vaughn Wilson, Bethesda and Ray L. McLester of Wheatley.

The Board set up an outline of policy in which emphasis is to be placed upon education, not only among beekeepers but among horticulturists, farmers and stockmen. It will not be the policy to burn all infected colonies although the laws give arbitrary authority to do that. It is felt the beekeepers need leadership and cooperation. The Board will be devoted to developing the industry in Arkansas and to cooperating with leaders of other states and the nation. We dream of a state clean of disease, local markets so developed that an untouched resource of our people may be put to use.

Ray McLester,
Member Arkansas Apiary Board.

— V —

Kansas Association, Iola, City Park, August 12

Kansas State Association will hold its annual meeting the second Sunday in August, (August 12) Iola Kansas, City Park. All Kansas beekeepers are urged to attend. Come, have a good time, learn about bees, exchange experience with others and go back home ready for another try. There will be a good program and picnic. Bring along plenty to eat.

W. W. Cline, Sec'y-Treas.

— V —

Georgia Coastal Plain Experiment Station

The Georgia Coastal Plain Experiment Station established a department of bee culture research at Tifton early this year. The Station is under the Directorship of George A. King and is part of the University system of Georgia. The Department of Bee Culture is supported by State funds. J. F. Reinhardt, former State Apiarist of Montana has been engaged to carry on the work.

A research program is being designed to suit the needs of Georgia beekeepers involving the production of honey and bees and the pollination of crops. Shortage of equipment and material will delay some of the work until 1946. A small experimental apiary has been established and preliminary studies are now in progress.

— V —

Empire State (N. Y.) Syracuse, August 11

The summer meeting of the Empire State Honey Producers Association

is to be held at Elmwood Park, Syracuse, August 11. All beekeepers and their friends and families are invited. Dr. E. R. Root and other notables will be with us. An interesting program is planned.

Those not familiar with Syracuse may ask directions to the park on entering the city. Bring your lunch.

M. R. Cary, Sec'y-Treas.

— V —

Vermont Picnic, August 25

Vermont Beekeepers Association picnic meeting will be held Saturday, August 25 at the residence of Mrs. Dana Smith, Lyndonville, Vermont. The meeting will start at 10:00 A. M. Everyone invited. Bring picnic lunch and honey samples.

Charles Mraz, Sec'y.

— V —

Virginia Association, August 29, Lynchburg

The annual summer meeting and basket picnic of the Virginia Association will be held Wednesday, August 29 from 10:00 to 4:00 P. M. Miller Park, Lynchburg, Virginia. Lunch will be served at noon and watermelons in the afternoon, courtesy G. B. Lewis Company.

H. W. Weatherford,
Secretary-Treasurer.

— V —

New Rochelle (N. Y.) Sunday, August 19

The New Rochelle Association will hold a joint meeting with the Connecticut Association, on Sunday, August 19 at 2:30 P. M. at the home and apiary of Mr. and Mrs. William L. Bradley of West Haven, Connecticut. Cooperative beekeeping between the two states will be the subject under discussion. This meeting promises to be large so be prepared to spend an interesting and educational afternoon. Special guest speakers will be present. Members arriving by train will be met at the station by our host, Mr. William Bradley. See you at Bradley's.

A. W. Barnes,
Ass't Secretary.

— V —

Middlesex County (Mass.) August 25

Middlesex Massachusetts, County Association will hold its meeting on Saturday, August 25 at 2:00 P. M. at the home of Mr. and Mrs. C. H. Lothrop, 83 Bloomfield Street of Lexington. From Lexington center take Massachusetts Avenue toward Arlington one half mile to Bloomfield Street on right (opposite Munroe School). Go to end of Bloomfield Street. Mr. Lothrop's greenhouses are easily seen. Hives will be opened to show the six different strains of bees being kept there. Questions will

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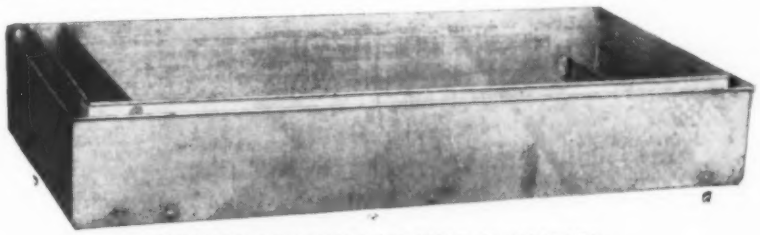

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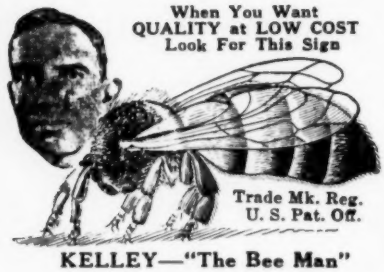

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H. R. Stevens, Pres.

—V—

Red River Valley Picnic—August 5

The Red River Valley annual beekeepers picnic will be held at the Crookston Park, Crookston, Minnesota the first Sunday in August. Movies will be a feature of the evening and there will be contests for all, and prizes.

Melford Olson.

—V—

Western New York—August 5

The Western New York Honey Produceers Association will hold their annual meeting and picnic, August 5 at Ellicott Creek Park, Niagara Falls. Dr. Phillips will speak on "The Crisis of 1945" and E. J. Dyce will speak on "Labor Saving Equipment." Basket lunch.

G. E. Norris, Sec'y.

—V—

Atlantic Honey Plant Conference

A conference of beekeepers, agronomists, horticulturists, conservationists and representatives of other branches of agriculture was held at Atlantic, Iowa, on July 11 and 12. It was unique since it appears to be the first general step to set a pattern for cooperation between beekeeping and other agriculture. Although the meeting was within the requirements of the Office of Defense Transportation prohibiting larger meetings, the nearly fifty representatives had the interests of all agriculture at heart and the official authority to undertake duties beneficial to their field and to beekeeping.

The Wednesday morning session was devoted to a round table discussion headed by Dr. Richey of Iowa State College on Pollination Problems in Orchard and Garden. Robert Clark, probably the largest fruit grower in Iowa gave a general description of his orchard practice. Pollination in the seed production of legumes featured the afternoon meeting led by Professor H. D. Hughes of Farm Crops, Iowa State College, in the absence of Dr. Hollowell of the U.S.D.A. Farm authorities are well aware of the importance of pollination in securing seed and the value of bees in pollination.

This meeting at the Pellett Gardens made it evident that the legume clovers are extremely important plants in all rotation plans and particularly in the building of more permanent pastures, one of the high endeavors of conservation authorities.

The Pellett Clover recently named for Frank C. Pellett was exhibited. One plant showed roots running three or four feet down in the soil and a top spread of about three feet. Other plants of interest were Birdsfoot trefoil, soon apparently to be recommended for permanent pasture plantings as it has been in the Eastern states; mountain mint; anise-hyssop and wood mint, all of which may have special use for essential oils and become important as honey plants in sections devoted to this purpose.

Dr. S. W. Edgecomb, Director of esearch of the W. Atlee Burpee Company, Doylestown, Pennsylvania, shared the evening program with Dr. I. J. Johnson, Iowa Experiment Station. Dr. Edgewood predicts that eventually we will have hybrid seeds just as we now have hybrid corn and that the honeybee will undoubtedly play an important part in producing these hybrid seeds at lower cost.

Professor Johnson gave details of the experiment being conducted in placing honeybees in red clover fields to secure larger seed set. According to him in one Iowa county alone it will require according to observations and agronomy plans in cooperation with local farmers, some 161,000 pounds of sweet clover for proper seeding either for plowing under or for seed yield. Either red clover or sweet clover should be produced in the county or locality adapted to seed yield.

Dr. R. L. Von Trebra, U. S. Soil Conservation Service of Milwaukee, Wisconsin, Regional Chief of Operations, addressed the Rotary Club meeting just before the general session giving an interesting description of the necessity for calcium and phosphorous for proper production of both people and animals and also in the preparation of plants so these ingredients might lead to proper development of animal life. Dr. Von Trebra then led the discussion on the use of honey plants in soil conservation in which he thinks are high possibilities for beekeeping in the future.

Proper coordination between the various interests embracing the probable use of soil would mean that such plants could be used on right-of-ways, roadsides, permanent pastures, gulleys and similar situations to the best interests of all concerned. The proper cooperation from beekeepers in forwarding the program is necessary and presents an unusual opportunity.

The last session was a combined one of the Honey Plant Committee of the National Federation together with agronomists, soil conservationists and beekeepers. R. B. Willson of the Paton Company acted as chairman

(Please turn to page 295)

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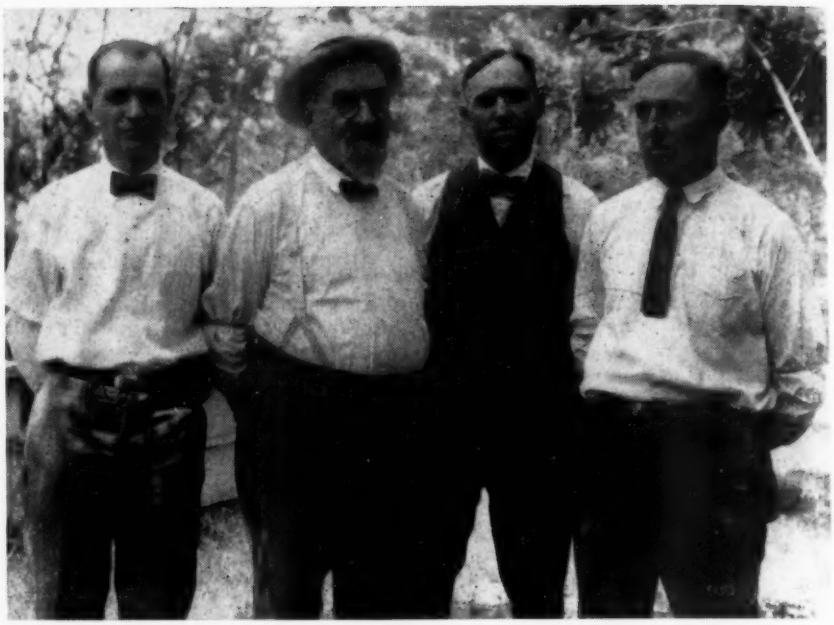

Who's It—last issue—The three sons of Dadant & Sons, with their father. Left to right—Henry (H.C.); C. P. Dadant; Maurice (M.G.); Louis (L.C.).

WHO'S IT?

(Continued from page 272)

read the Journal for almost another year.

The most frequent mistake made in the guessing this month was naming the individuals in the wrong place as Paul W. Grant of Wichita, Kansas does. "Left to right, L. C. Dadant, H. C. Dadant and M. G. Dadant." Or as Frank Baker, Tennessee, left to right "Maurice, Henry and Louis." The actual order is as Eldon Martin has it. Henry, Maurice and Louis. However if the three are named, that is enough.

James E. Starkey of Indiana thinks they are "cute and good looking. No wonder they grew up to fine men to carry on the family tradition, especially if father, C. P. dolled them up like that when they were boys. But why they left the dress on Henry I'll never know. Fond parents are like that." Wrong again, Jim, the cute boy in the center is Maurice.

Willard Smith of Deland, Illinois is a little scared, "Maybe this is another Kelly-Hawkins deal but that trio of good looking youngsters ought to be Louis, Henry and Maurice." Tex Sterman of Wichita Falls, Texas identifies them from the picture on page 3 of the Dadant System of Beekeeping. Dr. E. F. Phillips of Cornell University, as familiar with the three boys as anyone, also misses when he says, "left to right, Maurice, Henry and Louis." Somehow or another they can't conceive of Maurice wearing a dress. Dr. Phillips says, "Isn't it a pity they all lost their good looks?" Harold L. Kelley, Silver Springs, Maryland however hits the ball with "Henry, Maurice, Louis." He hopes we don't run out of subjects. As long as the interest is at fever heat we probably won't, Harold.

Alan Latham stumbles all over the lot. "I never saw the three boys as the picture shows them. Henry must look somewhat as he did at that age. Anyway I call the boy at the left Henry, the one on the right Maurice. The middle one is the third one." Ernest F. Calhoun, Parkersburg, West Virginia call them, "Louis, Maurice and James." James C. Dadant the son of L.C. (right) is in service with the United States Army in the Phillipines and is of the second generation of Dadants in this country. Then Calhoun complicates things by saying "Maybe I am guess-

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ing wrong as one young man looks like Alan Root."

Clyde N. Wood of South Woodstock, Vermont picks them out from the Dadant System of Beekeeping. Robert S. Turner, Dunkerton, Iowa, declares his decision based on the fact that "These are the only three well-known beekeepers that have come from a single family." Mrs. T. W. Burleson, Waxahachie, Texas, says right to left, "Louis, Maurice and Henry—three sons who have followed in their father's footsteps. I look back with pleasure on time spent in Father and Mother Dadant's home."

Not all guesses were right by any means. John Vargo, Granite City, Illinois also declares "the middle one is James C. Dadant, next to him Clifford Muth and the tall one, one of the Roots, all of them capable of being leaders in any industry." Mrs. S. S. Claussen, Mt. Morris, Illinois thinks they are all of the Robins family, (Illinois) Leonard, Lawrence and brother. A. J. Bissinger, Corning, Iowa "sons of A. I. Root, Ernest, H. H. and Alan. (Alan is the son of Ernest, Mr. Bissinger). V. O. Lee, Charleston, Arkansas declares them "Kenneth, Calvin and William, sons of E. C. Bessonet." David R. Babb, Barrington, Illinois, "the one on the left, H. H. Root, on the right, E. R. Root." Mrs. V. S. Pardue, Troy, Tennessee "The young man on the right, the oldest, E. R. Root, the middle one Alan Root, the one on the left H. H. Root—From them the tree of beekeeping knowledge sprang." (Ouch! You leave all the rest of us out!)

Mrs. Joseph Hermann of Manchester, Iowa, "I am sure I have seen the smile on the little fellow on the left on one of the Taylor's, the big one must be a Taylor too, in fact all three." (L. D. Taylor, Harlan, Iowa.) Harriett C. Hess, of Pittsburg, Pennsylvania declares that "the boy on the right is Newell E. France whose picture appeared last month and those with him are his younger sister in the middle and his younger brother on the left."

—V—

LEHIGH VALLEY, (PA.)

The annual summer meeting of the Lehigh Valley Association was held June 30 in the home of Mr. and Mrs. Floyd Sandt, with a fine attendance. Prof. E. B. Everitt of Allentown led the discussion on swarm control which is always a welcome subject. Prof. E. J. Anderson, head of the Research Department of Apiculture at Pennsylvania State College, gave a detailed account of the project undertaken at the college and some of the results obtained. Refreshments were served by the host and hostess.

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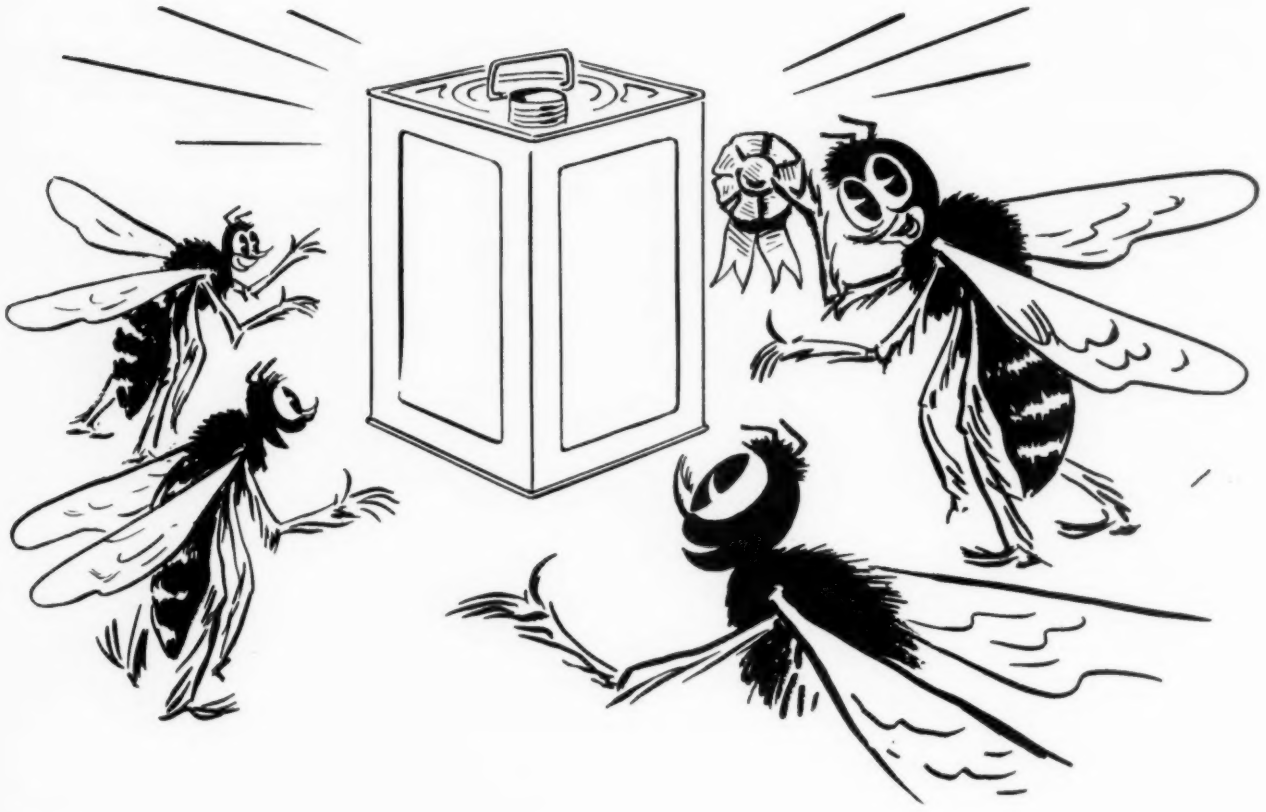

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CROP AND MARKET REPORT

Compiled by M. G. DADANT

For our August issue, we asked reporters to answer the following questions:

1. How is the crop now compared to 1944?
2. What prospects from now on?
3. What do you guess total crop will be average per colony in your territory?
4. Are beekeepers inclined to pack and sell locally, or job their crop?

Crop Compared to 1944

Even with the light crop in 1944, what we got that year came earlier and as a consequence, the reports indicate that the total crop up to the date this is written, July 20, probably is not as much as in 1944 or was not until at least July 1. This is accounted for by the extremely backward conditions not allowing the bees access to the clover and other blossoms in the field, even though they were plentiful.

In the southern sections, the entire Southeast is short of 1944, in fact extremely short. Georgia somewhat better but not up to last year and Florida very light also. Alabama and Mississippi are having surpluses where they usually have none and Louisiana, Arkansas and even Texas in the favored locations, are much better than they were last year.

Throughout the entire rest of the country, conditions would indicate that honey was not as plentiful as last year except for Arizona and New Mexico which have had a very good crop. California continues to be a disappointment with prospects no better than 1944 crop so far. In the extreme northern sections, as well as in Canadian provinces, the cool, backward weather has delayed everything and conditions yet are to be determined.

Prospects From Now On

Throughout the entire clover belt, the prospects for the latter half of the summer season seems to be far better than usual, owing to the delaying of the clover crop in the fact that there is ample moisture to carry the crop along much longer than ordinarily. However, in some sections drought is beginning to slow up the flow and the crop may be curtailed as a consequence, although most folks are encouraged throughout the entire northern sections from Maine through the inter-mountain territory, with the amount of moisture and the condition of the clovers. Bees have not been in peak condition to meet this crop which will mean a very ragged average from one colony to another.

Per Colony Averages

Here we meet the most divergence of views. Probably the per colony average for the New England states will run from 40 to 60 pounds at least and New York about the same. In the states of Maryland, the Virginias and Carolinas, probably the average will not run over 20 to 30 pounds for the entire year.

Georgia and Florida may run 50 to 60 pounds and Alabama through Mississippi and Louisiana, 60 to 75 pounds. Texas reports 40 pounds in some locations and as much as 100 in others but apparently with a better crop predicted than last year. Pennsylvania looks like her average crop. Ohio still was reporting little in the hives but excellent prospects if everything turns out right. Throughout Indiana, Illinois, southern Iowa into Nebraska, and even into southern Wisconsin, things look most promising. This is in the heart of the Dutch white clover region and here we see the averages running up, the guesses being all of the way from 100 to 175 pounds per colony. Michigan apparently is due for a mighty poor crop unless the clovers swing rapidly and the same can possibly be said for Minnesota and the Dakotas. However, there is still time at the date this is written, July 20, for a favorable turn and still a crop at least as good as last years can be secured.

In the inter-mountain territories, although Colorado reports short so far, we believe that the prospects are far better than average and the averages per colony will run from 75 to 150 pounds with Idaho reporting chiefly about 50 to 75 pounds average. Oregon and Washington should run about 75 pounds whereas unfortunate California probably will not average over 30 pounds per colony.

How Will the Crop Sell

Naturally, with local demand extremely heavy for honey on account of the shortage of sugar, there is going to be more than average tendency for the moderate size or smaller beekeeper to pack in smaller containers and thus dispose of his crop. We hear of this practically all over the country with, of course, some of the larger producers jobbing directly to the packers. We are inclined to think, however, that the packers are going to have difficulty in getting all of the honey they need and this is going to be unfortunate because in the long run, the beekeepers are going to lose by not having this national avenue of distribution of the crop to channels which would approach more generally a supplying of the ordinary demands.

In New York and the central western states, there undoubtedly, is a switching toward the cooperatives which also will have a tendency to make it difficult for independent packer.

Most certainly we do not want such a condition as that of the independent packer considering the discontinuing of the packing of honey. We have now three or four at least, large packers who most certainly are doing an excellent job of merchandising and distributing honey, not only for retail use but in many industrial and manufacturing uses which should be continued by all means.

Ordinarily we do not favor the importation of large quantities of honey in competition with our own but when the market is as it is now, we believe that such importations have helped supply a market which would otherwise have gone begging and perhaps after demand becomes normal, we will have similar European demand for foreign honey which will take up the supply which has been coming here. At least we can hope in that direction and in the meantime the packers are enabled to continue their operations.

Summary

All in all, we believe that the total crop of honey for the United States this year is going to be considerably in excess of last year, in spite of short crops in Georgia, Florida, California and possibly in Michigan and Colorado, as well as the Red River Valley. However, the last two or three locations may come through later. California, Georgia and Florida have very little hope as most of their honey plants have gone through their bloom.

Undoubtedly larger crops would have resulted in other areas had bees not reached their peak early, owing to the extremely warm spell early in the months of March and April.

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A new combined CONTROLLABLE FEEDER AND SWARM CONTROL. Useful also as inner cover, bee escape and robbing preventive board in queenlessness and drying wet combs; as winter top entrance and pollen feeder. Sample with directions, postpaid $1.95; 5 (not assembled nor prepaid) for $8.00. NICOLLET COUNTY NURSERY, St. Peter, Minn.

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WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

LARGE CASH SAVINGS can be made by letting us work your wax into either wired or plain foundation. Large independent factory manufacturing a complete line of bee supplies including extractors, etc. Selling direct saves you the agent's profit. Quick shipment from large stock. Large free catalogue explains everything. Walter T. Kelley Co., Paducah, Kentucky.

FOR SALE

FOR SALE—One 2 frame reversible Jumbo extractor, one honey pump with 12 inch pulley. Wayland S. Case, Gordon, Nebr.

FOR SALE—70 colonies, 50 in M D. hives, 20 in Standard 10 frames. New hives. Dadant crimped wire foundation. 4,000 lbs. of honey. I am not able to take care of them. R. B. Craft, Zearing, Iowa.

FOR SALE—Lewis-Dadant bee supplies. Wanted—extracted honey. A. H. Harris, Authorized Dealer, Rt. 1, Jackson, Tenn.

FOR SALE—One 50-frame Woodman honey extractor. Has been used very little. P. M. Williams, Castleberry, Ala.

ONE THOUSAND ten-frame colonies of high grade Italian bees in Northern California. Inspection absolutely guaranteed. Winfield Gear Apiaries, Tehama California.

FOR SALE—200 colonies ten-frame hives, free of disease. Will sell at once with '45 crop on hives. H. L. Hoenk, Algona, Iowa.

FOR SALE—Sixty-six cases No. ten tin syrup pails, one hundred fifty cases 5 lb. glass syrup jars. All in good condition. 20c per case f. o. b. Menasha. Gear Dairy Co., Menasha, Wisconsin.

COMPLETE fully equipped outfit of 1500 hives, nuclei, extractor, tanks and established package and honey production in central and northern California. Al Winn, Rt. 1, Box 729A, Petaluma, California.

FOR SALE—My entire bee business, on account of failing health. J. J. Wilder Waycross, Georgia.

FOR SALE—500 10-frame comb honey supers for 4¼x1⅞ sections, new, in crates of 5, slightly shopworn, $3.50 per crate F. O. B. Windom, Minnesota. B. I. Evans.

WANTED

WANTED to hear from owner of farm for sale for fall delivery. Wm. Holly, Baldwin, Wisconsin.

100 Dadant wired frames with drawn combs, free from disease. Chas. Keller, Rt. No. 1, Bradenton, Florida.

WILL LEASE my 200 colonies and all extracting equipment. No disease. Leasee may obtain work at factory here at good wages when not working the bees. Great opportunity for good man. Would sell. Walter McKinley, George, Iowa.

POSITIONS AND HELP WANTED

WANTED—Discharged service man (with experience) for partner or helper. Can increase to 600 colonies. Box LAS, care American Bee Journal.

WE HAVE POSITIONS open for experienced package and queen men and also a man or two partially experienced for the 1946 package season. Winter work available manufacturing and preparing supplies. Opportunity for permanent employment. Write BOX RCD, care of American Bee Journal.

WANTED—Discharged service man for partner. Must be experienced. Large apiaries. Box 123, care American Bee Journal.

SEEDS AND TREES

WANTED—Bittersweet—Soon as the berries have turned color. Vines must be not less than 18 inches long and heavily loaded with berries. We pay 25c lb. f.o.b. your express office. Write for futher instructions. The Kervan Company, 119 W. 28 Street, New York, N. Y.

FOR SALE—Sainfoin seed 1944 crop grown without irrigation. 75c per pound up to 10 lbs.; 55c per pound in lots over 10 pounds. R. W. Brimhall, Pleasant Grove, Utah.

MISCELLANEOUS

Dry Skim milk 35 cents a pound; 5 lbs. $1.25. Brewer's yeast 40 cents a pound; 5 lbs. $1.50. Soy flour expeller, 10 lbs. $1.40. Write for prices in larger units. M. Y. S. Company, Bainbridge, New York.

I SELL best bee-hunting outfit. Grover, Bristol, Vermont.

RANCH MAGAZINE—Do you find it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any magazine published. Subscription $1.50. Hotel Cactus, San Angelo, Texas.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents, stamps. Membership of the Club, including subscription to the paper 10/6. The Apis Club, The Way's End, Foxton, England.

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MEETINGS & EVENTS

(Continued from page 289)

in the absence of Professor Dunham of Ohio.

Although this meeting was localized in the Central Western states comprising the nine states from Missouri River east to Pennsylvania, it is the beginning of similar work we believe in other parts of the country. We should endorse the efforts of the National Federation and the Honey Plant Committee in its recommendation which aim at the distribution of a greater amount of honey producing flora through the country. We are enthusiastic about the possibilities of the program with proper support and effort from beekeepers and we are certain that reciprocal cooperation from farm authorities will measure up to any effort we can make.

M. G. Dadant.

—V—

SWARM PROVES FATAL

Frederick Hamen of Pennsylvania sends in notice of the death of John E. Stearn, of Altoona, who was killed when he fell out of a tree while securing a swarm of bees. He crashed on the side walk, 20 feet below and although an ambulance was summoned he was lifeless before he reached the hospital. He was an active beekeeper and prominent in the affairs of his community, Roaring Springs, being a member of the Rotary Club, the Chamber of Commerce, the Professional Men's Association.

HONEY WANTED

A can or a carload.
Top prices paid.
Will furnish 60-lb. cans if desired.

C. W. AEPPLER CO. : Oconomowoc, Wisconsin

THE POSTSCRIPT

Some interesting questions come to me from a home economist who is doing some research work with honey. She wants to know about how many flowers the bees must visit to get a pound of honey and would like some estimate of the number of blossoms that may be pollinated in the process of bringing the necessary nectar to the hive.

Doctor Park has done some fine work in checking the field activities of the bees in the storing and ripening of honey. He estimated that it requires the labor of about 900 bees to bring in a load of raw nectar, that each bee spends about 8 hours in gathering honey and that each makes on an average about double the number of trips in a good season than in a poor one.

— V —

I have often watched the bees at work and tried to determine the number of flowers visited on a trip but it is difficult to keep up with an individual bee for long. They often visit as many as 20 flowers per minute and if the trip lasts twenty minutes a single bee will visit about 400 flowers while absent from the hive. Checking this against Park's observations it seems that a single bee will often visit as many as 5000 flowers in a day. Millions of flowers are thus visited in the process of storing a pound of honey.

— V —

Alyce Clover is a new crop in the South. Letters are coming to me to enquire about its value for the bees which I am unable to answer. We planted it in the test garden but it grew poorly here and failed to bloom. Evidently it is entirely unsuited to our northern climate. If any beekeeper can tell me whether it is attractive to the bees the information will be appreciated.

— V —

There have been more bees on the new clover, (Trifolium ambiguum) than on a similar plot of white Dutch clover in our test garden. To our surprise the bees have visited the new creeping trefoil, (Lotus major) more freely than either one.

— V —

Regarding the Salvia superba mentioned in the June Postscript, C. W. Wood writes, "My experience with this plant makes me think it would take care of itself under most conditions. In fact it is a little too implusive for average garden conditions, self sowing too freely for the gardener's peace of mind. It maintains itself here even in grass." This is one plant that I would advise planting on waste land.

Wood mentions the fact that war conditions have shut off practically all Asiatic and European contacts for new things in the plant line and that he has secured but little new since Pearl Harbor. The same is true with us. We have secured a few new things from Royal Botanical garden in England but most of our contacts abroad have been lost and we must now look to our own country. There are many wild plants that should be investigated for possible use.

— V —

H. M. Fraser conducts a very interesting department of the British Bee Journal in which he quotes from old bee books which are little known to the present generation. He sends me an extract from one published in Paris in 1728 telling of a man who called himself master of the bees. Quoting: "Whether he was the Master of the Bees or not they certainly followed him even more closely than a flock of sheep followed its shepherd, for they completely covered him. His hat, in particular was so covered with them that it exactly resembled a swarm. When the hat was removed the bees settled over his shoulders, his head, his arms, and his hands and even those which were nearest his skin did not sting him. Though he was pressed to reveal his secret, no information could be obtained except that he was master of the bees. They all followed him when he withdrew; for beside those he carried on his person, legions followed in his track."

— V —

I am indebted to Robert Hardin of Atlanta, Georgia for a jar of huajillo and catsclaw honey from his old home at Uvalde, Texas. It is no wonder that Texas has long boasted of the quality of Uvalde honey. It is light in color and of a most delicious flavor. It is hard to estimate how much the public would take if it could buy it now. Forty years ago before the clearing of the wild lands Uvalde was a center of beekeeping activity and we heard much about trainloads of huajillo and catsclaw honey. Much less of this honey is produced now but the quality still remains at the top.

— V —

During a recent visit to Mexico I was impressed with the large areas of lands still uncleared. It appears that in that country there is huajillo and catsclaw to provide an immense amount of the finest bee pasture. However, modern ideas are taking hold below the border and within a few years we may expect to see the same urge for change that has removed so many of the finest honey plants from Texas and other Southwestern States.

— V —

We are having a wonderful honeyflow with no let-up in sight. On July 12, my 66th birthday, the hive on scales gained 19 pounds. At the end of May the weight was 100 pounds. It had now reached 541 with a net gain of 346 pounds, not counting supers added. The following day it rained again thus insuring continued bloom for the white Dutch clover which is more abundant than for many years. With as many as nine supers on a single hive one wonders how much honey is yet to come in.

There have been but few such favorable seasons in the sixty years which I have known in this locality. In 1916 when Dr. Miller harvested his famous crop of comb honey there was a similar flow from white clover.

— V —

Several readers have sent specimens of motherwort with enthusiastic reports of the way the bees work the plant. Motherwort is weedy in appearance and sustains itself well in waste places without spreading into cultivated fields and becoming an annoyance. It is a good plant for naturalizing on unused land. It blooms over a long period and is always swarming with bees.

— V —

Basswood has shown but little attraction for the bees here again this year. Although we have many basswood trees it has been many years since we have had a worth while honeyflow from that source. This year there have been but few bees on the blossoms at any time and much of the time I cannot find any bees visiting the flowers. It may be because the bees were already so busy on the clover before basswood opened.

Basswood, or linden as it is sometimes called, is famous for its erratic behavior. It may go for years with but little for the bees and then may come a year with a very heavy honeyflow. Just what is needed to insure a crop from it is something of a puzzle.

— V —

The control of soil erosion is the most important problem confronting American agriculture at the present time. The United States Soil Conservation Service is a relatively new organization with a long time program which will require the use of a wide variety of plants. In our test garden we are seeking especially to find good honey plants which will prove valuable in erosion control and thus insure their general use. Such plants will find ready acceptance also by highway commissioners who are often hard pressed to control steep banks and gullies along the roadways.

FRANK C. PELLETT.

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obscure the condition
when war-time shorta
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